PRELIMINARY SITE EVALUATION REPORT

Remedial Investigation/Feasibility Study
Eagle Zinc Company Site,
Hillsboro, Illinois

Submitted To:

U.S. Environmental Protection Agency, Region V
and
Illinois Environmental Protection Agency

Submitted By:

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On behalf of

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March 2002

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I. INTRODUCTION

This Preliminary Site Evaluation (PSE) Report details background information and environmental conditions pertinent to the Eagle Zinc Company site (the "Site"), located in Hillsboro, Illinois. The PSE was conducted by ENVIRON International Corporation (ENVIRON) on behalf of the Eagle Zinc Group (the "Group") as the initial task associated with the Remedial Investigation/Feasibility Study (RI/FS) for the Site. The RI/FS is being completed pursuant to the Statement of Work (SOW) within the Administrative Order on Consent (AOC) between the Group and the U.S. Environmental Protection Agency (USEPA) dated December 31, 2001.

The purpose of the RI is to investigate the Site's physical characteristics, identify sources of contamination, and determine the nature and extent of contamination at the Site. The purpose of the FS is to develop and evaluate remedial action alternatives based on the RI data and report.

Subsequent sections of this PSE report present a discussion of:

- Physical Setting (Section II);
- Environmental Setting (Section III);
- Site History and Current Operations (Section IV);
- Regulatory History (Section V);
- Evaluation of Existing Data (Section VI);
- Site Inspection and Access (Section VII);
- Site Conceptual Model (Section VIII); and
- Preparation of Support Facilities (Section IX).

II. PHYSICAL SETTING

The Site is located in the Township of Hillsboro, Illinois. Hillsboro is located in central Montgomery County, Illinois, approximately 50 miles northeast of St. Louis, Missouri and 35 miles south of Springfield, Illinois. The Site is approximately 132 acres in size and is defined as the parcels of land currently owned by Eagle Zinc Company. The Site is situated on two adjoining tracts of land in the Southeast quarter of Section 1 and the Northeast quarter of Section 12, Township 8 North, Range 4 West, as well as part of the Southwest quarter of Section 6, Township 8 North, Range 3 West of the 3rd Principal Meridian.

Figure 1 presents a portion of the U.S. Geological Survey Hillsboro, Illinois 7.5-minute quadrangle, indicating the location of the Site property. Figure 2 is a generalized Site layout map. The Site was surveyed in June 1998 by Hurst-Roche Engineers Inc. (HR Engineers), including a boundary survey and a topographic survey that covers the majority of the Site (Figure 3). The topographic contour map will be completed to include the entire Site property and will be used as the base map for the project. As specified in the SOW, all sample location (grid) maps will be produced as overlays to the general base map.

The Site is located in a mixed commercial/industrial/residential area located in the northeastern part of Hillsboro. The Site extends from Smith Road south to an unnamed tributary to the Middle Fork of Shoal Creek. Industrial Drive extends north and south along much of the eastern property boundary. North of the Site is Smith Street a small facility called Hayes Abrasives, a golf course, and farm fields. Industrial Drive, an asphalt company, a railroad corridor, and the former Hillsboro Glass Company facility (now a steel warehouse) are located east of the Site. Some small commercial/industrial facilities (University of Illinois Extension office, Fuller Brothers Construction/Ready Mix, Illinois Wood Preservers, Hillsboro Rental, Vogel Plumbing) are located south of the Site. Some undeveloped land and a residential area containing single- and multi-family dwellings are located west of the Site. The nearest residential properties are located approximately 200 feet west of the southern and central part of the Site's buffer zone.

It is estimated that between 10 and 15 percent of the Site is covered by buildings. Approximately 23 buildings currently exist at the Site, some of which are currently unused or are used only for storage purposes. The types of buildings currently used for facility operations include the office/laboratory building, manufacturing/processing buildings, equipment/raw material/finished product storage buildings, baghouses, and maintenance facilities. Other Site features include railroad spurs, raw material and

residual material stockpiles, two storm water detention ponds, a small pond in the southeast corner of the property, and several paved and unpaved roadways.

III. ENVIRONMENTAL SETTING

A. Climate

The following information on the climate of Hillsboro, Illinois was obtained from on-line sources of historical weather data. The climate of Montgomery County is considered continental and temperate. The summer months are hot and humid with an average temperature of 75° Fahrenheit (F) and an average daily high temperature of 87° F. The winter months are moderately cool with an average temperature of 31° F and an average daily high temperature of 40° F. Rainfall is well distributed throughout the year, with the highest average rainfall in May. Total annual precipitation for the area is approximately 41 inches. Approximately 57 percent, or 23 inches, of the total annual precipitation occurs as rain from April through September and coincides with the growing season. The average total snowfall accumulation is approximately 18 inches.

The following information is for Springfield, IL, which is located approximately 35 miles north of Hillsboro. The average relative humidity is 83 percent in the morning and 63 percent in the afternoon. With the exception of January, the prevailing average wind direction throughout the year is from the south. In January, the average wind direction is from the west-northwest. The average wind speeds are greatest in January, March, April, and November, at 13 miles per hour (mph). The lowest average wind speeds are in July and August, at 8 mph.

B. Topography and Hydrology

The surface topography of the Site is relatively level, with surface elevations ranging from about 600 feet above mean sea level (msl) at the southwest retention pond to about 635 feet above msl in the central portion of the Site. The predominant topographic slope of the Site is southerly. Three surface water ponds exist at the Site: a southwestern storm water retention pond; an engineered storm water retention pond located near the eastern Site property boundary; and a small pond located in the southeastern part of the Site. The southwestern storm water pond receives a large proportion of the Site's storm water runoff. Storm water intermittently discharges westward from this pond to a drainage swale, which in turn discharges to an unnamed intermittent tributary of Middle Fork Shoal Creek. This outfall is permitted with the Illinois Environmental Protection Agency (IEPA) Division of Water Pollution Control as National Pollutant Discharge Elimination System (NPDES) Outfall 001. Middle Fork Shoal Creek Flows southwestward and joins Shoal Creek approximately 6 miles southwest of the Site.

Storm water that originates in most of the manufacturing areas and the easternmost part of the Site enters an engineered storm water retention system located near the eastern property boundary. The storm water retention system includes a small concrete settlement structure and a two-cell, clay-lined retention pond. This system is designed to provide adequate detention time to clarify the water prior to discharge. Storm water generally evaporates from the retention basins or is used as make-up water for the plant's non-contact cooling system. However, periodically, storm water would be discharged to a drainage swale (designated NPDES Outfall 002), which channels the storm water off the Site property to the east. The drainage swale extending from Outfall 002 discharges to Lake Hillsboro, approximately ½-mile east of the Site. Lake Hillsboro is a man-made reservoir, which discharges to Middle Fork Shoal Creek approximately one mile north of the Site.

The southeastern pond is located between two railroad spurs near the entrance to the plant. This pond does not appear to receive storm water runoff and has no inlet or outlet.

In addition to the drainage pathways noted above, storm water that collects in a limited area along the southern Site boundary discharges to a small stream located south of the Site. This stream joins the drainage swale that originates at Outfall 001 just west of the southwest Site property line.

According to the National Wetland Inventory (NWI) Map for Hillsboro, Illinois (U.S. Fish and Wildlife Service, 1988) the only mapped wetlands on the Site property include the southwest retention pond and the small pond located in the southeast part of the Site. These ponds are mapped as "intermittently exposed palustrine wetlands with unconsolidated materials in diked or impounded areas". According to the Federal Emergency Management Agency (FEMA) Flood Hazard Boundary Map for Montgomery County, Illinois (1991), no portions of the Site or the off-Site areas planned for investigation are located within either a 500-year or 100-year flood zone.

According to Illinois State Geological Survey (ISGS) publications, the Site is located within the Central Lowland Physiographic Province of Illinois. Within this province, the Site lies within the Springfield Plain Division of the Till Plains Section. This area is characterized by Pleistocene glacial till and outwash deposits derived from the Illinoian Stage glacial episode.

C. Soils

According to the *Soil Survey of Montgomery County* (USDA Soil Conservation Service, 1969), the soils at the Site belong to five types, generally corresponding to their elevation and proximity to drainage channels. The soil types are described as follows:

Hickory Series: These are severely eroded soils that exist on 7 to 25 percent slopes at the Site. The Hickory Series consists of deep, well-drained, moderately permeable soils on dissected till plains.

Blair Silt Loam: These are moderately eroded soils that form on 7 to 9 percent slopes. The Blair Series consists of very deep, somewhat poorly drained, moderately slowly permeable soils on dissected till plains. They formed in silty, water-worked sediments, or in sediments and the underlying till that contains a strongly developed paleosol.

Stoy Silt Loam: These are very deep, somewhat poorly drained, slowly permeable soils formed in loess on uplands. Slopes range from 0 to 10 percent.

Hosmer Silt Loam: These are eroded or non-eroded soils that form on 4 to 7 percent slopes. The Hosmer Series consists of very deep, moderately well drained soils formed in Loess on hills.

Cowden-Piasa Complex: At the Site, these form on 0 to 2 percent slopes. The Cowden Series consists of very deep, poorly drained, low permeability soils that formed in Loess on broad upland plains. The Piasa Series consists of very deep, poorly drained, low permeability soils formed in loess and the underlying till on broad, nearly level interfluvial areas on the Illinoian till plain.

D. Geology

According to the map entitled *Thickness of Glacial Drift in Illinois* (ISGS, 1975), the Site is underlain by between 50 and 100 feet of Pleistocene-age unconsolidated glacial deposits. The surface deposits in the area of the Site consist of up to 5 feet of loess, which are wind-blown deposits generally consisting of silt. According to the map entitled *Quaternary Deposits of Illinois* (ISGS, 1979), the site is underlain by the Vandalia Member of the Glasford Formation. This unit consists of hard, compact sandy or silty till. According to maps contained in the document entitled *Potential for Contamination of Shallow Aquifers in Illinois* (ISGS, 1984), the geologic materials underlying the Site are classified as Type E, which is described as "uniform, relatively impermeable silty or clayey till at least 50 feet thick, with no evidence of inter-bedded sand or gravel". This description is verified by monitoring well installation logs prepared by Goodwin & Broms, Inc. (GBI) as part of a ground water investigation conducted at the Site in November 1998. The soil borings for all of the monitoring wells except for G-

107 terminated at 15 feet below grade. The logs indicate that, with the exception of the soil boring for well G-107 which encountered thick deposits of residue materials, clay, silty clay and sandy clay were encountered to a depth of 15 feet below ground surface (bgs) at locations throughout the Site.

According to the Geological Map of Illinois (ISGS, 1967), the glacial deposits are underlain by bedrock consisting of the Pennsylvanian-age Bond Formation. This unit is between 100 and 300 feet thick and predominantly consists of limestone, with some layers of shale and sandstone.

E. Hydrogeology

A shallow ground water contour map (Figure 4) was constructed by ENVIRON using water level measurements made by GBI in December 1998. GBI collected water level measurements from all 13 on-Site wells. As shown on Figure 4, the inferred shallow ground water flow direction generally varies across the Site - southwestward in the southwest part of the Site, to southward and southeastward in the northern and central portions of the Site. Based on the ground surface elevations at the monitoring wells, the inferred pattern of shallow ground water flow generally reflects the Site topography.

Site activities conducted by Philip Services Corporation (Philip) as part of an underground storage tank investigation completed at the Site in 2000[1] included the completion of four slug tests within monitoring wells installed in the southeastern portion of the Site. The slug tests indicated hydraulic conductivities in the shallow water-bearing zone that ranged from 1.11×10^{-4} centimeters per second (cm/sec) to 8.54×10^{-5} cm/sec. These measurements are within the ranges of hydraulic conductivity generally reported for both glacial till and loess.

ENVIRON submitted a request to the IEPA for a 1-mile radius search of potential water supply wells and conducted an on-line search of well records maintained by the Illinois Department of Natural Resources (IDNR). The IEPA's Department of Public Water Supply reported that no community water supply wells are located within 2,500 feet of the Site boundaries. Several domestic wells were reported by the Illinois State Water Survey (ISWS) as being located within a one-mile radius of the Site. The well search results, including the IDNR well records and ISWS one-mile radius plot, are included in Attachment A.

In addition, ENVIRON reviewed the results of well searches previously conducted for the Site (Philip, 2000). The ISGS provided Philip with a survey map and well records for several domestic wells located in the general vicinity of the Site. In addition, the

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[1] As documented in a report entitled *Site Classification Completion Report*, dated September 13, 2000 ("Philip, 2000").

ISWS indicated 4 shallow monitoring wells and 3 shallow domestic wells in Section 1 of T8N, R4W, where the Site is located. The information provided by ISGS and ISWS is included in Attachment B. Mr. Robert Kirk, Director of Public Health for Montgomery County was contacted by ENVIRON concerning the potential existence of public or private water wells in the vicinity of the Site. Mr. Kirk indicated that although there are no local ordinances prohibiting the use of private wells, all residents of Hillsboro are provided with public water, which is obtained from Lake Hillsboro and Glen Shoals Lake. ENVIRON confirmed with Mr. David Booher, Water Superintendent for Hillsboro, that the City does not have any public water supply wells.

Finally, ENVIRON conducted a drive-by reconnaissance of properties adjoining the Site. ENVIRON did not observe any water supply wells on these properties[2].

In addition to information on nearby water supply wells, ENVIRON obtained analytical results for several rounds of surface water samples collected from Lake Hillsboro by IEPA's Division of Public Water Supply between April and October 2001. The samples were collected from the area of the City's potable water intake, which is located near the dam for the reservoir, approximately one mile north of the Site. The samples were analyzed for metal, pesticides, and certain inorganic and physical parameters. The results indicate that no metal or pesticides have exceeded federal primary Maximum Contaminant Limits (MCLs). Manganese concentrations exceeded the secondary MCL for manganese in some of the samples, likely representing background concentrations.

[2] A door-to-door survey to obtain information on private wells was not conducted by ENVIRON as part of the PSE, nor was such a survey conducted by Philip as part of its previous wells searches. Such a survey was determined not to be necessary at this time.

IV. SITE HISTORY AND OPERATIONS

A. Site History

The following information concerning the history of the Site is largely summarized from the report entitled *CERCLA Expanded Site Inspection Report* prepared by the IEPA in 1994, a September 5, 2000 letter prepared by Eagle-Picher responding to an information request received from IEPA, a report entitled *Environmental Risk Assessment* prepared by Risk Science International in 1982, historical information sources reviewed at the Hillsboro Public Library, and discussions with Eagle Zinc Company personnel. Zinc processing operations began at the Site in 1912, at which time the facility operated as a zinc smelter under the name Lanyon Zinc Company. The smelting products included zinc and sulfuric acid. The Site was purchased by Eagle-Picher Industries in 1919. Eagle-Picher conducted zinc smelting and manufacture of sulfuric acid until approximately 1935. Sometime after 1919 and most likely during the early 1920s, the manufacture of zinc oxide and leaded zinc oxide commenced at the Site. The leaded zinc oxide was manufactured by combining basic lead sulfate (obtained from off-Site sources) with zinc oxide. Additional details on the leaded zinc oxide operation are currently unavailable; however, these activities ceased around 1958. Eagle-Picher continued to manufacture zinc oxide at the Site until November 1980, at which time the Site was purchased by The Sherwin-Williams Company. According to Sherwin-Williams personnel, The Sherwin-Williams Company conducted manufacturing operations for a period of less than one year. In 1984, the facility was sold by The Sherwin-Williams Company to Eagle Zinc Company, a division of T.L. Diamond & Company. Eagle Zinc has predominantly continued manufacturing zinc oxide using the American process employed by Sherwin-Williams and Eagle-Picher.

ENVIRON obtained copies of historical aerial photographs covering the Site area. The following photographs were reviewed, with sources noted: [3]

- Montgomery County Natural Resources Conservation Service – 1986
- Vista Information Solutions – 1973, 1987, and 1998
- National Aerial Resources – 1938, 1956 and 1968

In general, the aerial photographs show the progressive development of residences and industry surrounding the Site, as well as the expansion of on-Site facilities, including buildings and the areas of the Site on which operations occurred. Copies of the aerial

[3] Aerial photographs from other sources investigated had limited availability or inappropriate scale.

photographs[4] are included in Attachment C. The aerial photographs are described as follows:

1938: Significantly fewer buildings existed at the Site in 1938; most notably, the current office building, the zebra building, the Block 2 furnace building, cooling loops and all associated equipment, and several smaller buildings did not exist. However, several buildings existed west and north of Building C, which do not currently exist. Most, if not all, of the northernmost part of the Site appeared to be cropland, and large portions of the area west of the manufacturing plants appeared to have been unused, consisting of open, undeveloped land. Lake Hillsboro existed in its current configuration. A few houses existed immediately west of the Site, but other than the former Hillsboro Glass manufacturing facility, located southeast of the Site, none of the industrial or commercial properties that currently border the Site existed. The areas north and east of the Site consisted solely of farmland. Of particular note, the southwest pond was approximately three times larger than its current size, extending further to the north and east.

1956: In 1956, the configuration of Site buildings generally appeared as it does today. The aforementioned buildings west of Building C had been demolished between 1938 and 1956. The Block 2 furnace building and associated structures had been constructed between 1938 and 1956. Several conical stockpiles existed in the southern portion of the Site, which appeared to consist of raw material feedstock. All other areas of the Site, including the southwest pond and undeveloped northern and western areas, appeared unchanged from the 1938 aerial photograph. Significant development of residential areas west and south of the Site occurred between 1938 and 1956, as well as construction of railroad facilities (roundhouse and other buildings) immediately southeast of the Site.

1968: This aerial photograph appears generally the same as the 1956 photograph, with two exceptions: several small buildings located north of Building C had been demolished; and the southwest pond had been drained to less than one-quarter of its previous size, presumably by creating the outlet now referred to as Outfall 001. According to Eagle Zinc personnel, the pond may have been partially drained during prior to 1968 to limit recreational use of the pond or as a result of public safety concerns. There also had been increased industrial development south and

[4] Copies of the aerial photographs obtained from National Aerial Resources were enlarged to show site features.

east of the Site, including expansion of the former Hillsboro Glass manufacturing facility.

1973: In this photograph, the southwest pond appears to contain little or no water. Stockpiling of materials, both feedstock and residuals, is more evident in the southern portion of the Site, immediately west of the manufacturing plant and in the northern parts of the plant.

1986/1987; 1998: Although the locations of material piles differ somewhat, these photographs show the Site as it appears today, including the current configuration of the southwest pond.

B. Description of Historical Operations

Zinc oxide has been manufactured at the Site using both direct and indirect processes. The indirect process reportedly involved the processing of zinc metal in a muffle furnace. The direct process, which continues to be used at the Site (the American process) involves the processing of zinc ores and stockpiled furnace residues in a rotary kiln furnace. While it is likely that Eagle-Picher, Sherwin-Williams and Eagle Zinc all used the direct process, only Eagle-Picher and Sherwin-Williams used the indirect process (muffle furnace). Residual materials historically generated by the manufacturing operations have included, among other things, rotary kiln residue, muffle dross, metallic zinc particles, and refractory bricks from the facility's furnaces. Zinc oxide is used in many applications, including the paint and ceramics industries, agricultural products, rubber products and cosmetics.

As discussed in Section IV.A above, other products historically manufactured at the Site include leaded zinc oxide, metallic zinc, and sulfuric acid. Sulfuric acid was reportedly manufactured at the Site by roasting zinc sulfide to remove the sulfur with the southwest surface water pond used to provide non-contact cooling water. In addition, the facility has produced a fine-grained product that is rich in carbon by screening stockpiled rotary residues using a rotary screen and other methods.

C. General Description of Zinc Oxide Manufacturing Process

The pyrometallurgical process currently used by Eagle Zinc for zinc oxide manufacturing, and which had also been used by Eagle-Picher and Sherwin-Williams, is known as the American process. As currently implemented, this process involves mixing zinc-bearing feedstocks with sized anthracite coal at the mix room. The coal is delivered to the Site by railcar; the zinc ore is delivered to the Site by railcar and truck. The

furnace mix is fed into a natural gas-fired rotary furnace, 8-foot diameter by 50 foot long, at the Block 2 Furnace Building. The natural gas provides the heat source and the anthracite coal provides a reducing atmosphere to reduce the zinc feedstocks to zinc vapor. The zinc vapor is drawn from the rotary furnace into a refractory brick combustion chamber and combusted to zinc oxide by the addition of ambient air. The zinc oxide, suspended in the vapor stream (products of combustion and air), is drawn into a steel flue and a series of steel cooling loops to cool the zinc oxide and vapor stream before it is collected in a baghouse. The residue left in the rotary furnace is expelled from the rotary furnace into the discharge chamber, quenched in water and hauled to a pad for storage. The zinc oxide collected in the baghouse is conveyed to the refinery and stored in bins before refining. Based on the physical and chemical properties of the zinc oxide, bins of zinc oxide may be blended while being refined. The refining process involves conveying the zinc oxide through a natural gas fired rotary dryer in which the temperature of the zinc oxide is varied to achieve the desired product characteristics. The historic operation of the American process would have been similar.

D. Description of Current Operations

Eagle Zinc currently produces two products: zinc oxide by the American process (described above), and a carbon-rich by-product by a screening process.

The facility screens stockpiled rotary residues using a double rotary screen with ¼-inch and 2-inch screen sizes to produce the fine-grained product that is rich in carbon. This operation is conducted on a concrete pad located immediately west of the zebra building. Large and medium oversize materials created by this process are currently stockpiled to the west of the concrete pad. Eagle Zinc is exploring options for beneficial reuse of this material and is consulting with IEPA on these efforts.

Eagle Zinc has also produced zinc oxide using a Waelz Kiln in the Block 3 Building as part of a pilot project. The Waelz Kiln process feedstock is the furnace residue from Block 2 and stored residue onsite. The Waelz Kiln operates like the Block 2 process where the zinc oxide is collected in a baghouse. The product collected is used as a feed for Block 2. The Waelz Kiln has not been used since October 2000.

In addition, Eagle Zinc formerly conducted a metallic zinc granule process in the zebra building, located in the northern part of the manufacturing plant. Crude zinc granules were conveyed to a Stedman Mill and then screened. The granule product was screened to a desired size fraction. The oversize material (metallic zinc) was collected and shipped off-Site to a different zinc processing facility. The undersized fraction was zinc oxide, which was sold in bulk. This operation was last conducted in September 2001.

E. Residual Materials

For the purpose of characterizing plant residual materials, residue piles have been categorized as the following types: RR1 (Rotary Residue Type 1); RR2 (Rotary Residue Type 2); RRO (Rotary Residue Oversize); RCO (Rotary Clean Out); CPH (Carbon Plant Hutch); and MP (Miscellaneous Piles). These residue types were described by Eagle Zinc personnel as follows:

RR1: Rotary Residue Type 1 originated from the passing of feedstock through a rotary furnace under the normal American Process. Rotary furnaces 1, 2 and 4 all may have produced this type of residue. The residue is a carbon-bearing material and the non-carbon material is typically smaller than the Rotary Clean Out residue. Much of this material has been processed by screening, resulting in carbon-rich material, which is sold and/or reused on-Site in the process, and oversize materials, which are currently stockpiled pending approval for off-Site beneficial reuse.

RR2: This material came from the Block 3 rotary kiln (now referred to as the Waelz Kiln) prior to 1979 and most likely much earlier. The feedstock that resulted in this rotary residue likely consisted of muffle dross; therefore, this material could differ chemically from RR1 residues.

RCO: Rotary Clean Out residue exhibits, for the most part, the same characteristics as Rotary Residue Type 1. It originates from the formation of a slag ring in a rotary furnace, which is removed with the use of an air hammer. Therefore, it tends to have a larger proportion of irregular shaped particles. Production of this type of residue could have occurred any time a rotary furnace was used. The frequency of furnace clean-out has varied significantly.

RRO: Rotary Residue Oversize material consists of Rotary Residue Type 1 that is passed through a screening process. RRO currently generated by Eagle-Zinc consists of material that is between ¼-inch and 2 inches in size. However, RRO materials historically generated at the Site ranged in size from ¼-inch to significantly larger than 2 inches. RRO material currently generated by Eagle Zinc is staged at a designated location in the northern part of the Site. This is the same location that was historically used to store RRO.

CPH: Carbon Plant Hutch residues were historically produced by a process that passed RR1 residues through a 1/8- or 1/4-inch screen. A majority of the carbon-

containing material would pass through the screen and the large particles would be rejected. The carbon-rich fraction would then go through a carbon jig, which consisted of a series of two pans. Water was pumped upwards through the pans. The carbon floated at the top and the heavier material was carried along the bottom. It is the heavier material, called "hutch", which makes up the CPH residue piles.

MP: The materials referred to as "miscellaneous piles" for the purpose of sampling may have originated from the historic use of retort or Wetherill furnaces. These piles also appear to contain other debris, such as refractory brick, construction rubble, and pipe fragments.

V. REGULATORY HISTORY

The following information concerning the regulatory history of the Site is largely summarized from the report entitled *CERCLA Expanded Site Inspection Report*. Key events in the operational and regulatory history of the Site are noted in the form of a timeline in Attachment D. The facility was initially listed on the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) on June 1, 1981 as a discovery action initiated during Sherwin-Williams' ownership of the Site. Sherwin-Williams reportedly filed U.S. EPA form 8900-1, Notification of Hazardous Waste Site, in accordance with Section 103(c) of CERCLA, which indicated that slag had been disposed on the Site property. A Preliminary Assessment (PA) of the Site was conducted in 1984 by the IEPA pursuant to CERCLA, which culminated in the submission of a PA Report to U.S. EPA Region V. Sampling of residual materials by IEPA in the early 1980s resulted in a determination that the materials were not hazardous waste and the Site was not subject to RCRA permitting.

In addition to the CERCLA activities described above, several sets of surface water samples were collected by the IEPA from the southwest storm water discharge between 1980 and 1982 and analyzed for metals. Detected concentrations of zinc, iron, lead and copper in the surface runoff above applicable state surface water quality standards on one or more occasion resulted in a Notice of Violation (NOV) from the IEPA. This reportedly prompted Sherwin-Williams to remove approximately 18,000 tons of residue materials from 10 acres of the Site.

A CERCLA Expanded Site Inspection was conducted by IEPA on October 26 and 27, 1993, including the collection of 28 environmental samples. The results of the Expanded Site Inspection are summarized in the following section. Based on information provided by IEPA and as reported in the Expanded Site Inspection Report, the USEPA's Chief of Emergency Response for Illinois, Mr. Donald Bruce, determined that the Site did not require a time-critical or non time-critical removal action, and that the Site property does not pose an immediate threat to human health or the environment.

On May 22, 1998, Eagle Zinc entered into an Interim Consent Order with the Illinois Attorney General and IEPA, which contained an interim site plan for: (1) preparation and submittal of a Storm Water Pollution Prevention Plan (SWPPP), (2) sampling of on-site materials, (3) sampling of storm water discharges, (4) development and implementation of a ground water monitoring plan, and (5) disposal of construction and demolition debris.

Pursuant to the Interim Consent Order, a monitoring well installation and ground water sampling program was conducted at the Site by GBI, which included the

installation and sampling of nine shallow monitoring wells. IEPA representatives collected split samples from the monitoring wells. This investigation culminated in the submission of the March 1999 report entitled *Monitoring Well Installation and Ground Water Sampling Interim Report* to the IEPA. Sampling of residual piles and underlying soils was also conducted by GBI pursuant to the Interim Consent Order. The results of this investigation, which also included the collection of split samples by IEPA, were submitted to IEPA in a March 1999 report entitled *Interim Report of Residue Sampling and Analysis.*

Based on the Site's discharges of storm water from two point sources, the occurrence of "regulated industrial activities" at the Site, and the facility's SIC code, the Site was determined to be subject to NPDES storm water permitting requirements as per 40 CFR 122.26 (b)(14)(ii). A NPDES Notice of Intent (NOI) was prepared by Eagle Zinc and submitted to the IEPA. On June 20, 2000, IEPA issued NPDES Permit No. IL0074519. The NPDES permit requires: monthly monitoring of NPDES Outfall 002, preparation/implementation of a SWPPP, and submission of an annual inspection report to IEPA. A SWPPP was prepared for the Site in December 2000. The structural improvements and best management practices specified in the SWPPP included the construction of a new storm water retention system in the northeast area of the Site to allow for settling of runoff prior to discharge to Outfall 002. The storm water retention system, which consists of a two-cell retention basin, was completed in 2001.

The removal of a 500-gallon gasoline UST in April 1998 resulted in the reporting of a Leaking UST (LUST) incident to IEPA, because a limited amount of impacted soil was observed in the tank excavation and a pin-size hole was observed in the tank itself. No free-phase gasoline or ground water was observed in the tank excavation. No contaminated soil was excavated or transported off-Site. The former location of the UST is indicated on Figure 2. The monitoring wells used for the UST investigation (MW-A, MW-B, MW-C/G-106, MW-D and MW-E) are shown on Figure 4.

To address the LUST incident, site classification and assessment activities were performed by GBI and Philip, including: (1) screening of soil samples collected from soil borings using a photoionization detector (PID)[5], (2) collection of a soil sample for laboratory analysis of benzene, toluene, ethylbenzene and xylenes (BTEX), (3) collection of soil samples for particle size analysis, (4) installation of four new monitoring wells, (5) sampling of five monitoring wells for BTEX compounds[6], (6) completion of slug tests to estimate hydraulic conductivity, and (7) completion of a well search. Neither the soil

[5] The soil screening included the soil borings for wells MW-A through MW-E, as well as a soil boring completed to a depth of 5 feet below grade located 20 feet west of the former UST.

[6] Pre-existing well G-106 was designated MW-C and sampled as part of the UST investigation.

sample, nor any of the ground water samples collected from the monitoring wells to date have contained detectable concentrations of BTEX compounds. Based on these results and discussions with IEPA, the LUST incident was classified as "low priority" and ground water in the former tank area is being monitored periodically for three years[7], after which time a no further action proposal is expected to be made, barring any detections of contaminants above applicable ground water standards. The monitoring program continues to be conducted by Philip on behalf of Eagle Zinc Company, and all reports are submitted to IEPA. The ground water monitoring program associated with the former UST is being completed independently from the RI/FS.

[7] Quarterly during the first year, semi-annually during the second year, and annually in the third year.

VI. EVALUATION OF EXISTING DATA

Several environmental investigations have been conducted on-Site and in adjacent off-Site areas since the early 1980s. These investigations are summarized in Table 1. The data generated by the previous investigations are summarized below by medium, including soil, sediment, residues, surface/storm water, and ground water. Data summary tables are provided for each medium. The analytical data were compared with: (1) site-specific background data collected during the investigations; and (2) regional background values. Where site-specific background data were available, the "t-Test" was used to determine if a statistically significant difference exists between the media data and background. These comparisons were used in the preliminary identification of potential contaminants of concern (PCOCs) and potential areas of concern (PAOCs).

A. Soil

The 1982 *Environmental Risk Assessment* report prepared by Risk Science International (RSI) presents the results of soil samples collected at various locations on the Site property in October 1980. RSI's report states that the soil samples did not contain concentrations of metals significantly above background soil samples collected in the Hillsboro area. Concerning the soil data noted in RSI's report, all of which were collected by others prior to RSI's risk assessment, the 1982 report concluded: "much of the lead, cadmium, copper, and zinc, although high in concentrations in the dross, kiln residues and ore spoils, appears to be relatively inert and fixed in these materials." An accurate location map for the soil samples was not available to ENVIRON for review. Therefore, the conclusions made by RSI are discussed herein for informational purposes only, and the soil data collected in 1980 have not been included in the preliminary evaluation of Site soil data discussed below.

The Expanded Site Inspection conducted by IEPA included the collection of 18 soil samples: a background sample and duplicate sample collected from a location in the nearby town of Butler, and 16 samples collected at various off-Site locations. All soil samples were collected from the ground surface (0-4 inches below grade) and analyzed for Target Compound List (TCL) inorganic compounds. The locations of the off-Site soil samples collected in 1993 are shown on Figure 5.

In May 1998, 44 soil samples were collected by GBI at 25 on-Site boring locations. In addition, 6 split samples were collected by IEPA representatives. The boring locations were grouped within four Site areas, which were designated Areas 1 through 4. Between one and three samples were collected from each of the soil borings, which generally extended to the depth at which native clay was encountered. All soil samples were

analyzed for lead and cadmium, with selected soil samples also analyzed for Toxicity Characteristic Leaching Procedure (TCLP) lead and TCLP cadmium. The locations of the soil samples collected by GBI in May 1998 are shown on Figure 6.

The results of the soil samples collected off-Site and on-Site are presented in Tables 2 and 3, respectively. All non-leachate data, both on-Site and off-Site, were compared with Metropolitan Statistical Area (MSA) and non-MSA background values presented in the Illinois Tiered Approach to Corrective Action Objectives (TACO), and off-Site soil data were statistically compared with the results of off-Site background samples collected by IEPA using the t-Test.

Based on these comparisons, no constituent concentrations were determined to be significantly different from site-specific background levels. While arsenic concentrations were determined to be different from site-specific background, the highest detected concentration was only marginally above the average regional background level, as reflected by the non-MSA background value[7]. In addition, arsenic is not known to have been used or released at the Site. As the off-Site soil samples were well distributed around the Site, the available data do not indicate any detectable impacts to off-Site soils through airborne emissions from the Site or other pathways.

For on-Site soil, the lead and cadmium concentrations in each soil area exceeded site area background levels determined by IEPA in 1993, as well as MSA and non-MSA background values. Based on these comparisons, Areas 1 through 4 have been identified as PAOCs for on-Site soil at this time, with lead and cadmium as the principal constituents. As the amount of on-Site soil data is limited, these metals will be considered PCOCs, pending collection of additional data.

B. Sediment

Eight sediment samples were collected by IEPA as part of its October 1993 Expanded Site Inspection. Three of the samples were collected on-Site: sample X-205 from the area of Outfall 001 (drainage point for southwest pond); sample X-206 from the upper reach of the storm water drainage swale that discharges to the southwest pond; and sample X-207 from the drainage swale in the northern part of the Site that discharges at Outfall 002. The remaining samples were collected at off-Site locations in the eastern drainageway (sample X-208) or within the western drainageway (samples X-203 and X-204). Background sample X-201 and its duplicate (X-202) were collected from an unnamed tributary to Middle Fork Shoal Creek, upgradient of the point at which NPDES Outfall 001 discharges to this tributary. All sediment samples were analyzed for the full

[7] Montgomery County is listed in TACO as being located within a non-MSA area.

TCL list, including both organic and inorganic compounds. The locations of the sediment samples collected by IEPA in October 1993 are shown on Figure 7.

Table 4 is a compilation of the sediment sampling data. The data were compared with relevant background values. Based on this evaluation, the two major drainageways that receive storm water discharges from the Site have been identified as PAOCs for sediments. The principal constituents identified for sediments at this time include: antimony, arsenic, beryllium, cadmium, lead, nickel, silver, thallium and zinc. As the amount of sediment data is limited, all of these metals will be considered PCOCs, pending collection of additional sediment data in the drainageways.

C. Residues

Two samples of residue piles, designated X-103 and X-105, were collected by IEPA as part of the 1993 Expanded Site Inspection and 68 samples of residue piles were collected by GBI in May 1998, with split samples collected by IEPA. The samples collected by IEPA in 1993 were analyzed for TCL inorganics; the samples collected by GBI in May 1998 were analyzed for lead and cadmium, with selected samples analyzed for TCLP lead and TCLP cadmium. The residue samples collected by GBI represented 15 discrete stockpiles that were categorized as the following types: RRO (Rotary Residue Oversize); RR1 (Rotary Residue Type 1); RR2 (Rotary Residue Type 2); RCO (Rotary Clean Out); CPH (Carbon Plant Hutch); and MP (Miscellaneous Piles).

The stockpiles and locations of all residue samples collected in 1993 and 1998 are shown on Figure 5. The analytical results for the residue samples are compiled in Table 8. The residue data were compared with RCRA maximum concentrations for toxicity. No samples contained TCLP cadmium concentrations above the RCRA limit. In addition, no samples collected from RRO, RCO, or CPH stockpiles contained TCLP lead concentrations above the RCRA limit. At this time, the RR1, RR2 and MP stockpiles have been designated as PAOCs. The principal constituent appears to be TCLP lead. As the amount of data from the residues piles is limited, TCLP lead will be considered a PCOC, pending collection of additional residue data.

As discussed above, the soil data collected by IEPA do not indicate that off-Site soils have been impacted by historical particulate emissions from the Site. Furthermore, based on current and on-going observations made by Eagle Zinc personnel and ENVIRON, the existing residue piles do not appear to be a source of airborne dust emissions. These observations include the relatively large grain size of the materials exposed at the surface of the stockpiles, the consolidated/compacted nature of the older stockpiles, and no observed airborne dust in the areas of the piles during windy

conditions. Potential impacts resulting from historical airborne emissions will be evaluated through the soil investigations proposed in the RI/FS Work Plan.

D. Surface Water

Storm water samples were collected from the outlet for the southwest pond (general area of current NPDES Outfall 001) for laboratory analysis of inorganic constituents on four occasions between 1980 and 1982. Data are available for two of these sampling rounds: November 19, 1981, and March 23, 1982.

On June 9, 1998, pursuant to the Interim Consent Order with the IEPA, first flush and composite samples were collected from Outfall 001 by GBI and analyzed for metals and other inorganic parameters, and on June 29/30, 1998, GBI collected first flush and composite samples from Outfall 002 and analyzed the samples for metals and other inorganic parameters. Since that sampling episode, the facility installed a storm water retention basin to capture storm water prior to it being discharged. In addition, since July 18, 2000, the facility has sampled Outfall 002 on a monthly basis[8] as required under the NPDES permit, which regulates the Site's storm water discharges. The analytical parameters for the monthly sampling rounds are total suspended solids (TSS), sulfate, cadmium, and zinc.

The locations of the previous storm water samples, Outfall 001 and Outfall 002, are shown on Figure 9. The analytical results are summarized in Table 6. For screening purposes, the storm water data were compared with Illinois Water Quality Standards: 35 IAC 302 Subpart B (General Water Quality Standards), and 35 IAC 302 Subpart D (Secondary Contact and Indigenous Aquatic Life Standards). It should be noted that these criteria are statewide standards and are not effluent limitations specific to the facility's NPDES permit.

While historical storm water data collected in the vicinity Outfall 001 in 1981 and 1982 exceeded Subpart B standards for iron and zinc and Subpart D standards for iron, zinc and lead, the samples collected at Outfall 001 in June 1998 did not exceed either the Subpart B or Subpart D standards. The June 1998 results for Outfall 001 were subsequently used by IEPA as a basis for determining that storm water monitoring was not required at Outfall 001 as part of the facility's NPDES permit.

For storm water samples collected at Outfall 002, chromium, copper and zinc have exceeded the Subpart B standards; however, only zinc also exceeded the Subpart D standard. Based on these comparisons, surface water in the Site's two major drainageways has been identified as a PAOC. The principal constituents appear to be

[8] No monthly samples are collected during periods when storm water is not discharging from Outfall 002.

chromium, copper, lead, zinc, manganese, iron and sulfate. As the amount of surface water data is limited, all of these inorganic constituents will be considered PCOCs, pending collection of additional surface water data in the drainageways.

E. Ground Water

In December 1998, GBI collected ground water samples from nine shallow on-Site monitoring wells. The samples were split with IEPA and analyzed for 35 IAC Part 620.410 inorganic and organic parameters. The locations of the monitoring wells are shown on Figure 4.

No 35 IAC 620 organic constituents were detected in any of the ground water samples collected by GBI or the split samples retained by IEPA. Therefore, Table 7 shows the results of the inorganic analyses. For screening purposes, the ground water data were compared to the Illinois Ground Water Protection Act (GPA) (35 IAC 620) standards. Metals, including lead, iron, manganese, cadmium, and zinc, as well as sulfate, exceeded GPA standards (Class I, Class II, or both). The exceedances were limited to downgradient wells G-107 and G-108, both of which are located in the southwestern part of the Site. Based on this evaluation, ground water in the area of wells G-107 and G-108 have been identified as a PAOC at this time. The principal constituents appear to be lead, iron, sulfate, manganese, cadmium and zinc. As the amount of ground water data is limited, all of these inorganic constituents will be considered PCOCs, pending collection of additional ground water data at the Site.

As discussed in Section V, four monitoring wells were installed by GBI in the area of a former 500-gallon gasoline UST that exhibited evidence of leakage. The sampling results, which indicated no detectable BTEX compounds, show that ground water has not been impacted. As these data were not collected to assess environmental conditions on the Site as a whole and were all non-detect, neither the data nor the on-going UST monitoring program is discussed further in this report. Based on their locations and relative spacing, it is not anticipated that the monitoring wells installed for the purpose of evaluating potential impacts from the tank (i.e., MW-A, MW-B, MW-D, and MW-E) will be used during the RI.

VII. SITE INSPECTION AND ACCESS

On January 16, 2002, ENVIRON conducted a preliminary inspection of the Site and neighboring properties and visited several local governmental offices to obtain information pertinent to the PSE. ENVIRON also interviewed Eagle Zinc personnel concerning information pertinent to the PSE. In addition to the information presented above, the following information was obtained:

- All Site monitoring wells were inspected and were observed to be in good condition.
- With the exception of some limited areas of steep or uneven terrain, ENVIRON does not anticipate significant on-Site access limitations.
- Through the use of tax maps and physical inspection, ENVIRON has identified the off-Site properties on which field activities are expected to be conducted during the RI.
- ENVIRON conducted an inspection of the undeveloped northern and western portions of the Site property. With the exception of installation and sampling of monitoring wells by GBI in 1998, these portions of the Site have not been subjected to previous phases of environmental investigation. The majority of the undeveloped area north of the manufacturing plant was historically used as farmland. Based on historical aerial photographs, this area does not appear to have been used by the facility for any purpose. Some limited areas in the vicinity of the eastern drainage ditch, which transects this area of the Site, contain surface deposits of plant residues. Several historical residue piles and surface residue deposits exist in the undeveloped western part of the Site. Using aerial photographs and field sketches, the areas covered by these residues are depicted on Figure 8. Based on ENVIRON's visual observations, these materials appear to be of the rotary residue types described above. As indicated in the SOW, supplementary soil, residue and ground water sampling activities will be conducted in the undeveloped northern and western areas of the Site as part of the RI.

VIII. SITE CONCEPTUAL MODEL

Based on the evaluation of previous site data, the following affected media and PCOCs have been identified at this time:

On-Site Soil	Sediment	Residues	Ground Water	Surface Water
Analytical Fractions				
TAL-Metals	**TAL-Metals**	**TCLP-Metals**	**TAL-Metals**	**TAL-Metals**
Cadmium	Antimony	TCLP-Lead	Cadmium	Chromium
Lead	Arsenic		Lead	Copper
	Beryllium		Manganese	Lead
	Cadmium		Zinc	Manganese
	Lead		Iron	Zinc
	Silver			Iron
	Thallium			
	Zinc			
			Other Inorganics	**Other Inorganics**
			Sulfate	Sulfate

Based on the site investigations conducted to date, the PAOCs for on-Site soil, sediment, residues, surface water and ground water are depicted on Figures 10 through 14, respectively. Based on a qualitative evaluation, the following potential on-Site and off-Site exposure routes have been identified:

	On-Site Soil	On-Site Ground Water	Off-Site Ground Water	Off-Site Sediments	Surface Water
Potentially Affected Population	Employee	Construction Worker	Resident	Resident, Ecological Receptors	Resident, Ecological Receptors
Exposure Route(s)	Inhalation, Ingestion, Dermal	Inhalation, Ingestion, Dermal	Incidental Residential Exposure	Secondary Residential Exposure, Potential Ecological Impacts	Secondary Residential Exposure, Potential Ecological Impacts

The Site Conceptual Model will be modified and supplemented as necessary during the course of the RI/FS, as additional data are generated and evaluated.

IX. PREPARATION OF SUPPORT FACILITIES

Equipment needs for field sampling are expected to include a wheel or track mounted excavator, a truck-mounted hollow-stem auger drilling rig, a direct-push sampling apparatus (e.g., Geoprobe rig) mounted on an all-terrain vehicle, and portable equipment, such as a pressure washer, generators, PID, a portable x-ray fluorescence analyzer, pumps, and other tools for sampling. Following mobilization to the Site, a decontamination pad will be constructed for use during all on-Site sampling work. In addition, it is anticipated that indoor Eagle Zinc facilities will be available for sample screening (as required) and for restroom facilities. The facilities required for implementation of the RI will be discussed in further detail in the RI/FS Work Plan.

TABLES

Table 1:Summary of Historical Site Investigations
Page 1 of 1

Dates	Sampler	Locations	Media	No. Samples	Analytical Parameters	On/Off Site	Purpose
1980-1982	IEPA	Surface Runoff Areas	Storm Water	Unknown	Metals	On-Site	IEPA Stormwater Runoff Concerns
Oct-93	IEPA	On-Site/Off-Site Areas	Soil, Residuals, Sediments	Soil - 19; Sediment - 8; Residuals - 2	Soils-TAL Inorganics; Sediments-Full TCL/TAL List	On-Site/Off-Site	CERCLA/HRS Ranking Data Requirements
May-98	GBI; IEPA Split	On-Site Soils; residual piles	Soil, Residuals	Soils - 44; Residuals - 68	Lead, Cadmium (also selected samples for TCLP lead and cadmium)	On-Site	Interim Consent Order Requirements
Jul-98	GBI; IEPA Split	Outfalls 001 and 002[2]	Storm Water	4	Selected Metals, Other Inorganics, Physical Parameters	On-Site	NPDES Permitting
Dec-98	GBI; IEPA Split	Site Monitoring Wells	Ground Water	10	35 IAC Part 620.410 Inorganic and Organic Parameters	On-Site	Ground Water Assessment

[1] As per 1993 IEPA CERCLA Expanded Site Inspection Report and 1982 Environmental Risk Assessment.

[2] Outfall 002 also sampled monthly pursuant to general storm water permit

GBI - Goodwin & Broms, Inc.
IEPA - Illinois Environmental Protection Agency

Table 2: Historical Sampling Results - Off-Site Soil

Parameter	Date		Date		Date		Date		Date		Date		Date	
	Sample		Sample		Sample		Sample		Sample		Sample		Sample	
Aluminum (mg/kg)	12400		10000		6880		13000		13000		11500		10200	
Antimony (mg/kg)	8.9	J	9.2	J	10.6	J	9.4	J	10.5	J	13	J	9.3	J
Arsenic (mg/kg)	5.8		5.7		6.6		6.2		8.7		13.4		4.6	
Barium (mg/kg)	230		265		181		224		124		267		130	
Beryllium (mg/kg)	0.8	B	0.81	B	0.49	B	0.63	B	0.72	B	1	B	0.6	B
Cadmium (mg/kg)	--		--		3.2		0.89	B	3.5		11.3		0.71	B
Calcium (mg/kg)	10600		9880		598	B	11600		5360		5430		2580	
Chromium (mg/kg)	16.2		14.4		10.3		15.1		16.1		23.4		13.4	
Cobalt (mg/kg)	4.1	B	6.5	B	13.7		11.1		5.6	B	14.8		6.9	B
Copper (mg/kg)	20	J	19.7	J	30.6	J	24.7	J	36.4	J	104		15.3	
Iron (mg/kg)	14700		14400		11500		15400		14900		33900		12600	
Lead (mg/kg)	148		236		61		28.5		105		388		47	
Magnesium (mg/kg)	2370		2090		1040	B	2150		2090		1630		1530	
Manganese (mg/kg)	434		686		1180		922		600		1670		660	
Mercury (mg/kg)	0.17		0.18		--		--		0.16		0.16		0.11	B
Nickel (mg/kg)	13.5		11.5		20		14		15.9		35.1		11	
Potassium (mg/kg)	1890		1600		491	J	1060	J	1160	J	--		1650	
Selenium (mg/kg)	--		1.3	J	0.27	J	--		--		0.84	J	0.31	J
Silver (mg/kg)	--		--		--		--		--		--		--	
Sodium (mg/kg)	106	B	87.9	B	47.5	B	37.4	B	71.8	B	178	B	65.7	B
Thallium (mg/kg)	0.33	B	0.34	J	1.2	J	0.26	J	0.35	J	1.4	J	0.28	J
Vanadium (mg/kg)	28.5		27.1		27.5		28.5		27.3		37.7		24.7	
Zinc (mg/kg)	136		138		4770		1490		2480		2280		360	

B	The reported value is less than the CRDL but greater than the instrument detection limit.
J	Estimated value. Used in data validation when the quality control data indicate that a value may not be accurate.
--	Not Detected
mg/kg	milligrams per kilograms

*While technically located on-site sample is grouped with other 1993 off-site samples and hence had been compared to more stringent residential values.
Source: 1993 CERCLA Expanded Site Inspection Report

Table 2: Historical Sampling Results - Off-Site Soil

Parameter	Date													
	Sample	X110*		X111		X112		X113		X114		X115		X116	
Aluminum (mg/kg)		15000		13500		9950		16600		9750		14800		12500	
Antimony (mg/kg)		7.9	J	9	J	10.2	J	7.8	J	8.4	J	11.1	J	9.9	J
Arsenic (mg/kg)		13.6		8.5		6.2		5.6		11.9		10.5		7.1	
Barium (mg/kg)		150		193		233		116		183		181		227	
Beryllium (mg/kg)		0.78	B	0.94	B	0.85	B	0.85	B	1		0.8	B	0.93	B
Cadmium (mg/kg)		2		1.6		2.8		0.68	B	2.9		1.48		2.3	
Calcium (mg/kg)		3450		8380		2800		5940		4230		4970		8430	
Chromium (mg/kg)		20.7		20.2		14.8		21.7		15.9		19.4		18.9	
Cobalt (mg/kg)		8.5	B	7.8	B	11.3	B	10.6		5.8	B	7	B	9.8	B
Copper (mg/kg)		22.5		33.8		15.9		22.5		28.3	J	27.8	J	25.5	J
Iron (mg/kg)		20700		19300		13900		20400		28600		19700		18900	
Lead (mg/kg)		87.6		70.8		70.1		75.1		137		76.2		147	
Magnesium (mg/kg)		2500		1950		17.6		4870		1130		2030		2020	
Manganese (mg/kg)		563		491		2070		568		314		538		851	
Mercury (mg/kg)		--		0.11	B	0.11	B	--		--		0.42		0.24	
Nickel (mg/kg)		15.9		16.5		22.9		18.6		14.4		10.9		16.5	
Potassium (mg/kg)		1980		1920		1970		2400		1040		1470		1750	
Selenium (mg/kg)		0.49	J	0.42	J	0.39	J	0.27	J	0.76	J	0.52	J	0.53	J
Silver (mg/kg)		--		--		--		--		--		1.2		--	
Sodium (mg/kg)		62.8	B	120	B	52.4	B	45.8		293	B	61.5	B	89.9	B
Thallium (mg/kg)		--		0.25	J	0.28	J	0.27	J	0.71	J	0.57	J	0.53	J
Vanadium (mg/kg)		38.7		34.2		28.2		33.7		29.7		34.8		35.1	
Zinc (mg/kg)		606		488		489		451		1580		638		998	

B	The reported value is less than the CRDL but greater than the instrument detection limit.
J	Estimated value. Used in data validation when the quality control data indicate that a value may not be accurate.
--	Not Detected
mg/kg	milligrams per kilograms

*While technically located on-site sample is grouped with other 1993 off-site samples and hence had been compared to more stringent residential values.

Source: 1993 CERCLA Expanded Site Inspection Report

Table 2: Historical Sampling Results - Off-Site Soil

Parameter	Date		Date		Date		Date	
	Sample		Sample		Sample		Sample	
	1993		1993		1993		1993	
	X117		X118		X119		X120	
Aluminum (mg/kg)	13800		1410		9390		16300	
Antimony (mg/kg)	14.5	J	10.9	J	8.3	J	8	J
Arsenic (mg/kg)	8.5		5.9		6.7		10.7	
Barium (mg/kg)	222		106		196		155	
Beryllium (mg/kg)	1.7		0.73	B	0.6	B	0.95	
Cadmium (mg/kg)	4.8		--		2.8		--	
Calcium (mg/kg)	19300		1720		12100		2870	
Chromium (mg/kg)	17.3		18.5		13.7		20.4	
Cobalt (mg/kg)	10.6	B	11.1	B	14.9		7.4	B
Copper (mg/kg)	57.2	J	15.9	J	17.5	J	17.2	J
Iron (mg/kg)	21100		18200		14100		22900	
Lead (mg/kg)	186		30.4		51.9		32.7	
Magnesium (mg/kg)	2140		2120		1790		2870	
Manganese (mg/kg)	995		795		1520		889	
Mercury (mg/kg)	0.14	B	--		0.32		--	
Nickel (mg/kg)	27.5		12.8		14.8		16.9	
Potassium (mg/kg)	1460	J	1210	J	1670		1490	
Selenium (mg/kg)	0.35	J	0.27	J	0.55	J	0.38	J
Silver (mg/kg)	--		--		--		--	
Sodium (mg/kg)	1020	B	--		--		27.7	B
Thallium (mg/kg)	0.35	J	0.27	J	0.5	J	0.25	J
Vanadium (mg/kg)	34.3		34.5	B	26.7		39	
Zinc (mg/kg)	7420		354		1570		371	

B	The reported value is less than the CRDL but greater than the instrument detection limit.
J	Estimated value. Used in data validation when the quality control data indicate that a value may
--	Not Detected
mg/kg	milligrams per kilograms

*While technically located on-site sample is grouped with other 1993 off-site samples and hence had been compared to more stringent residential values.
Source: 1993 CERCLA Expanded Site Inspection Report

Table 3: Historical Sampling Results - On-Site Soil

Date	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98
Sample ID	Area 1 - 1S	X201	Area 1 - 1B	Area 1 - 108-8	Area 1 - 2S	Area 1 - 2B	Area 1 - 3S	Area 1 - 3B	X203	Area 1 - 4S
Parameter										
Lead (T) mg/kg	4342	2700	511	2330	4330	15.3	4772	3151	6300	4423
Cadmium (T) mg/kg	16.3	35	9.5	NA	16.8	6.6	30.5	20.8	21	21.5
Lead (TCLP) mg/L	8	3.7	NA	3.37	14.4	NA	23.4	31	29.6	36.3
Cadmium (TCLP) mg/L	0.193	0.17	NA	NA	NA	NA	NA	0.164	0.18	NA

Date	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98
Sample ID	Area 1 - 4B	X205	Area 1 - 5S	Area 1 - 5B	X206	Area 2 - 1S	Area 2 - 2S	Area 2 - 2D	Area 2 - 2B	Area 2 - 3S
Parameter										
Lead (T) mg/kg	1385	4500	1305	1745	2500	1900	2583	2318	552	378
Cadmium (T) mg/kg	15.7	30	7.7	14.5	27	31.2	11.7	45.4	84.1	9.6
Lead (TCLP) mg/L	32	32.4	4.3	5.1	3.8	5.98	2.5	2.96	NA	NA
Cadmium (TCLP) mg/L	0.202	0.16	NA	0.219	0.19	NA	0.149	NA	NA	NA

Date	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98
Sample ID	Area 2 - 3B	Area 2 - 4S	Area 2 - 4B	Area 3 - 1S	Area 3 - 2S	Area 3 - 3S	Area 3 - 4S	Area 3 - 4B	Area 3 - 5S	X212
Parameter										
Lead (T) mg/kg	9.2	328	158	650	13.8	438	4.6	48.6	7.1	18
Cadmium (T) mg/kg	2.5	6.5	9.2	22.1	8.8	15.9	3.3	7.7	8.8	NA
Lead (TCLP) mg/L	NA	NA	NA	0.04	NA	NA	NA	NA	0.3	NA
Cadmium (TCLP) mg/L	NA	NA	NA	NA	NA	NA	NA	NA	0.064	0.015

B	The reported value is less than the CRDL but greater than the instrument detection limit.
J	Estimated value. Used in data validation when the quality control data indicate that a value may not be accurate.
NA	Not Analyzed
(T)	Total
(TCLP)	Toxicity Characteristic Leaching Procedure
mg/kg	milligrams per kilograms
mg/l	milligrams per liter

Note: "200 Series" sample identification numbers also used for unrelated sediment samples collected by IEPA in 1993.
Source: 1993 CERCLA Expanded Site Inspection Report
1998 GBI Sampling Event and IEPA Spilt Samples

Table 3: Historical Sampling Results - On-Site Soil

Date	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98
Sample ID	Area 3 - 6S	Area 3 - 7S	Area 3 - 7B	Area 4 - 1S	Area 4 - 2S	Area 4 - 3S	Area 4 - 3B	Area 4 - 4S	Area 4 - 4B	Area 4 - 5S
Parameter										
Lead (T) mg/kg	887	1260	47.1	5075	267	1.2	20.6	0.4	30.3	8.6
Cadmium (T) mg/kg	485	27.5	69.6	83.4	22.7	8.8	5	4.3	15.9	3.2
Lead (TCLP) mg/L	0.56	0.54	NA	13.6	NA	NA	0.1	NA	NA	NA
Cadmium (TCLP) mg/L	NA	NA	NA	NA	NA	NA	0.074	NA	NA	NA

Date	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98	May-98
Sample ID	Area 4 - 5B	Area 4 - 6S	X217	Area 4 - 6D	Area 4 - 6B	Area 4 - 7S	Area 4 - 8S	Area 4 - 9S	Area 4 - 9D	Area 4 - 9M
Parameter										
Lead (T) mg/kg	17.1	8137	9800	6273	30	160	35.4	789	177	148
Cadmium (T) mg/kg	17.9	53	88	45	24.6	15	24.6	17.9	9.1	6.3
Lead (TCLP) mg/L	NA	4.73	6.7	5.25	NA	NA	0.305	1.48	NA	NA
Cadmium (TCLP) mg/L	NA	0.679	0.001	0.487	NA	NA	0.244	NA	NA	NA

B	The reported value is less than the CRDL but greater than the instrument detection limit.
J	Estimated value. Used in data validation when the quality control data indicate that a value may not be
NA	Not Analyzed
(T)	Total
(TCLP)	Toxicity Characteristic Leaching Procedure
mg/kg	milligrams per kilograms
mg/l	milligrams per liter

Note: "200 Series" sample identification numbers also used for unrelated sediment samples collected by IEPA in 1993.
Source: 1993 CERCLA Expanded Site Inspection Report
1998 GBI Sampling Event and IEPA Spilt Samples

Table 4: Historical Sampling Results - Sediment

Date	1993		1993		1993		1993		1993		1993		1993		1993	
Sample	X201-B/G		X202 (X201 Dup)		X203		X204		X205		X206		X207		X208	
Parameter																
Volatiles (ug/kg)																
Methylene Chloride	--		--		--		--		--		160	J	--		--	
Acetone	11	J	22		12	J	--		37	J	78	J	--		--	
2-Butanone (MEK)	--		4	J	6	J	--		20	J	48	J	--		--	
1,1,1-Trichloroethane	--		--		--		27	J	9	J	290	J	--		8	J
Toluene	--		--		--		--		--		36	J	--		--	
Semi-volatiles (ug/kg)																
2-Methylnaphthalene	--		--				--		100	J	--		--		--	
Phenanthrene	--		--		280	J	1900		--		--		--		--	
Anthracene	--		--		--		320	J	--		--		--		--	
Carbazole	--		--		--		290	J	--		--		--		--	
Fluoranthene	--		--		520	J	1700		--		--		130	J	--	
Pyrene	--		--		520	J	1600		--		--		140	J	--	
Benzo(a)anthracene	--		--		230	J	850		--		--		100	J	--	
Chrysene	--		--		310	J	670	J	--		--		120	J	--	
bis(2-ethylhexyl)phthalate	--		--		660		--		--		--		--		--	
Benzo(b)fluoranthene	--		--		480	J	--		--		--		140	J	--	
Benzo(k)fluoranthene	--		--		--		1200		--		--		--		--	
Benzo(a)pyrene	--		--		230	J	810		--		--		--		--	
PCBs (ug/kg)																
Aroclor-1254	--		--		250		120		--		--		--		24	J
Aroclor-1260	17	J	9.3	J	110		100		--		--		--		--	

B	Analyte was found in the associated blank as well as in the sample.
J	Estimated value.
--	Not Detected
ug/kg	micrograms per kilograms

Source: 1993 CERCLA Expanded Site Inspection Report

Table 4: Historical Sampling Results - Sediment

Date	1993		1993		1993		1993		1993		1993		1993		1993	
Sample	X201-B/G		X202 (X201 Dup)		X203		X204		X205		X206		X207		X208	
Parameter																
Inorganics (mg/kg)																
Aluminum	6630		6390		7370		14900		8360		16300		10700		9810	
Antimony	9	J	10.4	J	10.3	J	17.4	J	9.3	J	62.7	J	10.7	J	10.8	J
Arsenic	4.5		4.3		6.4		10.9		2.9		19.4		6		8	
Barium	79.5		70.4		99.9		97.4		89.6		383		167		92.5	
Beryllium	0.4	B	0.4	B	0.5	B	0.6	B	0.5	B	1.5	B	0.7	B	0.6	B
Cadmium	0.7	B	--		8.6		7.4		1.8		523		11.1		19.6	
Calcium	6360		5520		20300		12000		4660		6260		1510		3020	
Chromium	9.9		9.9		12.1		13.2		11		28.6		14.6		13.7	
Cobalt	6.1	B	4.9	B	6	B	8.1	B	4.5	B	353		10.8	B	4.7	
Copper	11.9		11.2		37.9		41.9		9		1420		20.8		52.2	
Iron	10100		9120		12400		14300		10900		82400		14900		14500	
Lead	46.4		35		101		72.5		10.2		932		76		125	
Magnesium	2760		2390		3330		2960		2620		4970		1500		1930	
Manganese	501		384		722		451		85.9		3500		1470		461	
Mercury	--		--		0.2		0.1	B	--		0.7		--		0.3	
Nickel	9.2	B	8.7	B	11.5		14.7	B	12.6		583		11.9		12.7	
Selenium	0.3	J	0.3	J	0.3	J	0.4	J	0.3	J	4.1		0.3	J	0.4	J
Silver	0.2		--		--		--		--		14.1		--		--	
Sodium	73.3	B	79.5	B	132	B	150	B	84.7	B	470	B	82	B	110	B
Thallium	0.3	J	--		--		0.4	J	0.3	J	3.8	J	0.3	J	0.4	J
Vanadium	17.9		17.4		19		26.3		20.8		52.9		41.2		27.2	
Zinc	326		291		2200		3040		5690		156000		2410		3280	

B	Analyte was found in the associated blank as well as in the sample.
J	Estimated value.
--	Not Detected
ug/kg	milligrams per kilograms

Source: 1993 CERCLA Expanded Site Inspection Report

Table 4: Historical Sampling Results - Sediment

Date	1993		1993		1993		1993		1993		1993		1993	
Sample	X201-B/G		X202 (X201 Dup)		X203		X204		X205		X206		X207		X208	
Parameter																
Pesticides (ug/kg)																
alpha-BHC	--		--		--		--		--		1.5	J	--		--	
beta-BHC	--		--		--		--		--		1	J	--		--	
gamma-BHC (Lindane)	--		--		--		--		--		1.1	J	--		--	
Aldrin	--		--		4.4		--		--		--		--		--	
Heptachlor epoxide	--		0.2	J	--		1.3	J	--		4.7	J	--		--	
Dieldrin	2.3	J	2.6	J	16		12		--		10	J	--		1.3	J
4,4'-DDE	--		0.4	J	--		--		--		0.7	J	--		--	
Endrin	0.3	J	0.9	J	18		12		2.4	J	--		--		2.8	J
Endosulfan II	--		--		--		--		--		--		--		3.6	J
4,4'-DDD	0.4	J	0.9	J	7.5		6	J	--		1.8	J	--		5.1	J
4,4'-DDT	3.7	J	0.4	J	11		15		--		4.8	J	--		--	
Methoxyclor (Mariate)	--		--		--		--		--		13	J	--		--	
Endrin Ketone	--		0.5	J	--		--		1.6	J	--		--		--	
alpha-Chlorodane	2	J	3.1		16		7		--		1.7	J	--		0.6	J
gamma-Chlorodane	2	J	2.5		15		7.4		--		3	J	--		0.7	J
Toxaphene	--		110	J	--		--		--		--		--		320	P

B	Analyte was found in the associated blank as well as in the sample.
J	Estimated value.
--	Not Detected
ug/kg	micrograms per kilograms

Source: 1993 CERCLA Expanded Site Inspection Report

Table 5: Historical Sampling Results - Residues

Date	1993		1993	
Sample ID	X103		X105	
Parameter				
Lead (T) mg/kg	260		1040	B
Cadmium (T) mg/kg	3.2		3.2	
Lead (TCLP) mg/L	NA		NA	
Cadmium (TCLP) mg/L	NA		NA	
Aluminum (mg/kg)	14900		7430	
Antimony (mg/kg)	13.9	J	11.4	J
Arsenic (mg/kg)	5		86.3	
Barium (mg/kg)	112		379	
Beryllium (mg/kg)	0.68	B	0.83	B
Calcium (mg/kg)	2010		1930	
Chromium (mg/kg)	15.9		22.6	
Cobalt (mg/kg)	12	B	20.1	
Copper (mg/kg)	201	J	911	J
Iron (mg/kg)	13900		104000	
Magnesium (mg/kg)	1970		1630	
Manganese (mg/kg)	915		178	
Mercury (mg/kg)	--		--	
Nickel (mg/kg)	20		55.9	
Potassium (mg/kg)	1120	B	300	J
Selenium (mg/kg)	0.31	J	1.3	
Silver (mg/kg)	--		6.3	
Sodium (mg/kg)	47.8	B	39.6	B
Thallium (mg/kg)	0.31	J	1.3	J
Vanadium (mg/kg)	28.2		22.6	
Zinc (mg/kg)	5580		31700	

B	The reported value is less than the CRDL but greater than the instrument detection limit.
J	Estimated value. Used in data validation when the quality control data indicate that a value may not be accurate.
NA	Not Analyzed
--	Not Detected
mg/l	milligrams per liter
mg/kg	milligrams per kilogram

Source: 1998 GBI Sampling
1993 IEPA Sampling

Table 5: Historical Sampling Results - Residues

Date	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
Sample ID	RR1-P1-1S	RR1-P1-1B	X202	RR1-P2-1S	RR1-P2-1B	RR1-P3-1S	X204	RR1-P3-1M	RR1-P3-1B	RR1-P4-1S	RR1-P4-1M
Parameter											
Lead (T) mg/kg	9970	2241	3000	61.8	986	4339	4000	15000	5292	40	423
Cadmium (T) mg/kg	19.6	15	44	11.8	11.9	30.7	29	14.5	35.4	6.8	8.1
Lead (TCLP) mg/L	123	NA	NA	NA	7.11	24.7	21.3	NA	NA	NA	NA
Cadmium (TCLP) mg/L	0.204	NA	NA	NA	0.123	0.27	0.24	NA	NA	NA	NA

Date	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
Sample ID	RR1-P4-1B	RR1-P4-1B2	X209	RR1-P5-1S	RR1-P5-1M	RR1-P5-1B	RR1-P5-2S	RR1-P5-2M	RR1-P5-2B	RR1-P5-2D	RR1-P5-3S
Parameter											
Lead (T) mg/kg	55	2644	3100	23.2	15	4.3	20.8	31.7	5.8	8.2	124
Cadmium (T) mg/kg	6.54	66.7	120	5	1.5	1.4	1.8	5	2.7	1.2	7.5
Lead (TCLP) mg/L	NA	14.8	16.7	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium (TCLP) mg/L	NA	0.8	0.99	NA	NA	NA	NA	NA	NA	NA	NA

Date	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
Sample ID	RR1-P5-3M	RR1-P5-3B	RR1-P5-4S	RR1-P5-4M	RR1-P5-4B	RR1-P6-1S	RR1-P6-1M	RR1-P6-1B	RR1-P7-1S	RR1-P7-1M	RR1-P7-1B
Parameter											
Lead (T) mg/kg	65.4	153	0.9	2.9	5	5012	2338	3059	16.5	40.7	49.3
Cadmium (T) mg/kg	3.89	8.5	0.1	11.1	12.3	19.3	19.7	25	1.2	5.7	3.6
Lead (TCLP) mg/L	0.2	NA	NA	NA	NA	NA	8.61	NA	NA	NA	NA
Cadmium (TCLP) mg/L	0.01	NA	NA	NA	NA	NA	0.273	NA	NA	NA	NA

NA	Not Analyzed
mg/l	milligrams per liter
mg/kg	milligrams per kilogram

Source: 1998 GBI Sampling
1993 IEPA Sampling

Table 5: Historical Sampling Results - Residues

Date	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
Sample ID	RR1-P7-2S	RR1-P7-2M	RR1-P7-2B	RR1-P7-3S	RR1-P7-3M	RR1-P7-3D	RR1-P7-3B	RR1-P7-4S	RR1-P7-4M	RR1-P7-4B	X210
Parameter											
Leac (T) mg/kg	24	6.7	11.6	25	31.4	25.9	20	85	26.9	41.4	46
Cadmium (T) mg/kg	4	1.8	5.6	3.9	1.8	0.5	5	7.1	3.8	6.8	3.8
Lead (TCLP) mg/L	NA	0.203	NA	NA	NA	NA	NA	NA	NA	0.255	0.011
Cadmium (TCLP) mg/L	NA	0.055	NA	NA	NA	NA	NA	NA	NA	0.019	0.021

Date	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
Sample ID	RR1-P8-1S	RR1-P8-1B	MP1-1S	MP1-1B	RCO-P1-1S	X207	RCO-P1-1B	RCO-P2-1S	RCO-P2-1M	X208	RCO-P2-1B
Parameter											
Lead (T) mg/kg	8.8	45	48695	50290	1.43	49	12.5	120	22.9	36	54.6
Cadmium (T) mg/kg	8	6.1	15.8	24.2	0.61	NA	0.4	5.8	1.94	3.3	6.5
Lead (TCLP) mg/L	NA	NA	255	288	0.41	0.012	NA	NA	0.22	0.007	NA
Cadmium (TCLP) mg/L	NA	0.028	NA	0.22	0.027	0.044	NA	NA	0.038	0.052	NA

Date	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
Sample ID	RCO-P3-1M	RCO-P4-1M	CPH-P1-1S	CPH-P1-1B	CPH-P2-1S	CPH-P2-1B	X211	RRO-P1-1S	RRO-P1-1M	RRO-P1-1B	RRO-P1-2S
Parameter											
Lead (T) mg/kg	2.8	47.9	637	198	65	35.4	77	36.8	44.3	37.2	84.8
Cadmium (T) mg/kg	1.1	10.8	15	13.7	14.2	10	6.3	5	4.3	5.6	3.5
Lead (TCLP) mg/L	NA	NA	1.51	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium (TCLP) mg/L	NA	NA	0.071	NA	NA	NA	NA	NA	NA	NA	NA

NA	Not Analyzed
mg/l	milligrams per liter
mg/kg	milligrams per kilogram

Source: 1998 GBI Sampling
1993 IEPA Sampling

Table 5: Historical Sampling Results - Residues

Date	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
Sample ID	RRO-P1-2M	RCO-P3-1M	RCO-P4-1M	CPH-P1-1S	CPH-P1-1B	CPH-P2-1S	CPH-P2-1B	X211	RRO-P1-1S	RRO-P1-1M	RRO-P1-1B	RRO-P1-2S
Parameter												
Lead (T) mg/kg	272	2.8	47.9	637	198	65	35.4	77	36.8	44.3	37.2	84.8
Cadmium (T) mg/kg	3.6	1.1	10.8	15	13.7	14.2	10	6.3	5	4.3	5.6	3.5
Lead (TCLP) mg/L	0.166	NA	NA	1.51	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium (TCLP) mg/L	NA	NA	NA	0.071	NA	NA	NA	0.015	NA	NA	NA	NA

Date	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
Sample ID	RRO-P1-2M	RRO-P1-2B	RRO-P1-3S	RRO-P1-3M	RRO-P1-3B	X218	RR2-P1-1S	RR2-P1-1M	RR2-P1-1B	X216	RR2-P1-2S	RR2-P1-2M
Parameter												
Lead (T) mg/kg	272	1292	80	842	1696	670	2722	2372	3385	4600	13797	456
Cadmium (T) mg/kg	3.6	8.4	16.7	6.7	6.1	6.1	7.3	9.2	5	50	5.8	1.5
Lead (TCLP) mg/L	0.166	0.081	NA	NA	0.158	0.084	4.18	5.3	7.11	8.5	16.9	2.74
Cadmium (TCLP) mg/L	NA	0.085	NA	NA	0.028	0.035	0.114	0.069	0.039	0.038	0.057	0.016

Date	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998	1998
Sample ID	X213	RR2-P1-2B	RR2-P1-3S	RR2-P1-3M	RR2-P1-3B	X214	RR2-P1-3D	RR2-P1-4S	RR2-P1-4M	X215	RR2-P1-4B
Parameter											
Lead (T) mg/kg	860	3186	1589	4362	690	160	274	3147	2781	3300	14298
Cadmium (T) mg/kg	3	3.6	3.6	7.7	4.2	11	10.4	9.1	2	5.5	46.5
Lead (TCLP) mg/L	2.6	1.94	5.63	10.6	1.21	0.12	0.29	3.84	5.71	6.7	2.33
Cadmium (TCLP) mg/L	0.02	0.031	0.016	0.094	0.062	0.11	0.132	0.133	0.046	0.042	0.514

NA	Not Analyzed
mg/l	milligrams per liter
mg/kg	milligrams per kilogram

Source: 1998 GBI Sampling
1993 IEPA Sampling

Table 6: Historical Sampling Results - Storm Water
Page 1 of 2

OUTFALL	002	002	002	002	002	002	002	002	002	002	002	002	002
Type	First Flush	COMP	First Flush	COMP									
Date	6/30/1998	6/30/1998	6/29/1998	6/29/1998	7/18/2000	8/17/2000	9/12/2000	10/4/2000	11/16/2000	12/11/2000	2/9/2001	3/15/2001	5/5/2001	6/15/2001
Parameters														
pH	7 6	8	7	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoride (mg/L)	0.67	0 98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate (mg/L)	135	116	NA	NA	237	433	97	78	51.6	225	117	325	506	212
Ammonia (as N) (mg/L)	0.31	0 42	0.1	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphorus-P (T) (mg/L)	0.58	0.17	0.17	0.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD5 (mg/L)	5	4	8.1	6.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOG (T)	NA	NA	0.8	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (T) (mg/L)	0.0001	0.0001	0.0001	0.0001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium (T) (mg/L)	50	41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium (T) (mg/L)	34	21	273	216	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum (T) (mg/L)	39	6.9	5.5	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boron (T) (mg/L)	0.16	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium (T) (mg/L)	0.043	0.022	0.031	0.02	<0.1	0.002	0.005	0.004	0.004	0.009	0.016	0.02	0.003	0.009
Copper (T) (mg/L)	0.64	0.32	0.346	0.235	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron (T) (mg/L)	52	11	3.05	2.78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese (T) (mg/L)	1.3	0.43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver (T) (mg/L)	0.006	0.005	0.001	0.001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium (T) (mg/L)	0 1	0.024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness (mg/L)	NA	NA	88	98.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
(ROE) TDS (mg/L)	310	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride (T) (mg/L)	6.4	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate,Nitrite (N Total) (mg/L)	0.73	0.99	0.86	1.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide T) (mg/L)	0 01	0.01	0.1	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS (mg/L)	4120	1080	2400	538	200	1	233	131	24	54	577	NA	NA	113
Antimony (mg/L)	0.017	0 026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic (T) (mg/L)	0 052	0 032	0.006	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium (T) (mg/L)	0.01	0.01	0.002	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium (T) (mg/L)	9.9	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium (T) (mg/L)	31	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium (T) (mg/L)	0 57	0.17	0.202	0.112	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium (T) (mg/L)	0.0019	0.001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (T) (mg/L)	0.067	0.017	0.016	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt (T) (mg/L)	0.046	0.022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (T) (mg/L)	0 55	0.31	0.362	0.287	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (T) (mg/L)	0 16	0.07	0.076	0.051	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Strontium (T) (mg/L)	0 24	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium (mg/L)	0 01	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc (T) (mg/L)	291	200	NA	NA	56.5	8.63	15.9	10.2	10.1	10.3	43.3	1.08	5.76	42.6
COD (mg/L)	NA	NA	147	76	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TDS (Conductivity)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium Hexavalent) (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA Not Analyzed
mg/l milligrams per liter

Source: 1998 GBI Sampling Event
1988 IEPA Samples

Table 6: Historical Sampling Results - Storm Water

OUTFALL	001	001	001	001
Type			*First Flush*	*COMP*
Date	11/19/1981	3/23/1982	6/9/1998	6/9/1998
Parameters				
pH	NA	7.5	7.2	7.4
Fluoride (mg/L)	NA	NA	NA	NA
Sulfate (mg/L)	NA	NA	NA	NA
Ammonia (as N) (mg/L)	NA	NA	0.1	0.1
Phosphorus-P (T) (mg/L)	NA	NA	0.05	0.05
BOD5 (mg/L)	NA	NA	4.1	3.7
FOG (T)	NA	NA	0.1	0.1
Mercury (T) (mg/L)	NA	NA	0.0001	0.0001
Calcium (T) (mg/L)	NA	NA	NA	NA
Sodium (T) (mg/L)	NA	NA	NA	NA
Aluminum (T) (mg/L)	NA	NA	0.253	0.197
Boron (T) (mg/L)	NA	0.1	NA	NA
Cadmium (T) (mg/L)	0.018	<0.005	0.006	0.005
Copper (T) (mg/L)	0.03	<0.01	0.007	0.006
Iron (T) (mg/L)	3	1.8	0.6	0.438
Manganese (T) (mg/L)	0.83	0.37	NA	NA
Silver (T) (mg/L)	<0.005	<0.005	0.001	0.001
Vanadium (T) (mg/L)	NA	NA	NA	NA
Hardness (mg/L)	NA	NA	198	196
(ROE) TDS (mg/L)	NA	514	NA	NA
Chloride (T) (mg/L)	NA	NA	NA	NA
Nitrate,Nitrite (N Total) (mg/L)	NA	NA	0.15	0.15
Cyanide T) (mg/L)	NA	NA	0.1	0.1
TSS (mg/L)	NA	NA	20	20
Antimony (mg/L)	NA	NA	NA	NA
Arsenic (T) (mg/L)	0.002	0.001	0.001	0.001
Selenium (T) (mg/L)	<0.001	<0.001	0.001	0.001
Magnesium (T) (mg/L)	NA	NA	NA	NA
Potassium (T) (mg/L)	NA	NA	NA	NA
Barium (T) (mg/L)	0.1	0.1	0.042	0.039
Beryllium (T) (mg/L)	NA	NA	NA	NA
Chromium (T) (mg/L)	<0.01	<0.05	0.001	0.001
Cobalt (T) (mg/L)	NA	NA	NA	NA
Lead (T) (mg/L)	0.14	<0.05	0.017	0.013
Nickel (T) (mg/L)	0.07	<0.05	0.009	0.008
Strontium (T) (mg/L)	NA	NA	NA	NA
Thallium (mg/L)	NA	NA	NA	NA
Zinc (T) (mg/L)	2.84	2.2	0.947	0.885
COD (mg/L)	NA	NA	88	71
TDS (Conductivity)	NA	460	NA	NA
Chromium Hexavalent) (mg/L)	NA	0	NA	NA

NA Not Analyzed
mg/l milligrams per liter

Source: 1998 GBI Sampling Event
1986 IEPA Samples

Table 7: Historical Sampling Results - Groundwater

With the exception of pH, all parameters are measured in mg/L (ppm).
Only detect values are presented. All wells sampled on December 1, 1998.

Well Number	Lab	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Fluoride
G101	PAS		0.002	0.056				0.014	0.003	0.013	0.58
	IEPA			0.057		0.064		0.012		0.009	0.52
G102	PAS		0.001	0.109				0.005	0.002	0.009	0.42
	IEPA			0.1				0.005			0.41
G103	PAS		0.004	0.124				0.013	0.004	0.013	0.49
	IEPA			0.11		0.051		0.012	0.005	0.01	0.48
G104	PAS	0.001	0.006	0.11				0.022	0.006	0.021	0.37
	IEPA			0.08		0.1		0.012	0.006	0.016	0.34
G105	PAS			0.09				0.001		0.003	0.33
	IEPA			0.088							0.3
G106	PAS		0.001	0.037		0.44		0.003	0.001	0.008	0.32
	IEPA			0.036		0.38				0.007	0.34
G106 (Duplicate)	PAS	0.001	0.004	0.092		0.42		0.014	0.004	0.013	0.33
G107	PAS	0.002	0.003	0.071		0.64	0.044	0.002	0.006	0.019	0.52
	IEPA										
G108	PAS		0.003	0.054		0.66	0.029	0.002	0.016	0.017	0.4
	IEPA			0.053		0.56	0.032		0.02	0.006	0.38
G109	PAS	0.002	0.003	0.065		0.14		0.012	0.002	0.058	0.54
	IEPA			0.059		0.067		0.01		0.058	0.45

Source: Monitoring Wel Installation and GW Sampling Interim Report, March 1999

Table 7: Historical Sampling Results - Groundwater

With the exception of pH, all parameters are measured in mg/L (ppm).
Only detect values are presented. All wells sampled on December 1, 1998.

Well Number	Lab	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
G101	PAS	1.98	0.004	0.087		0.008	0.005			0.03
	IEPA	8.9	0.005	0.19		0.01				
G102	PAS	1.82	0.002	0.424		0.005	0.001			0.019
	IEPA	4.2		0.43						0.12
G103	PAS	3.19	0.007	0.206		0.013	0.002			0.08
	IEPA	12	0.007	0.41		0.014				
G104	PAS	6.62	0.016	0.177		0.019	0.002			0.6
	IEPA	13	0.018	0.38		0.015				0.99
G105	PAS	0.22	0.001	0.204		0.002				0.023
	IEPA	1		0.23						
G106	PAS	0.88	0.003	0.061		0.004	0.001			0.038
	IEPA	3.6		0.12						
G106 (Duplicate)	PAS	3.8	0.011	0.215		0.012	0.002			0.104
G107	PAS	5.96	0.182	2.56		0.005				1.86
	IEPA									
G108	PAS	3.68	0.011	6.1		0.014	0.007			5.34
	IEPA	7.7	0.01	6		0.016				5.4
G109	PAS	3.14	0.012	0.124		0.008	0.006			0.058
	IEPA	10	0.007	0.025		0.01				

Source: Monitoring Wel Installation and GW Sampling Interim Report, March 1999

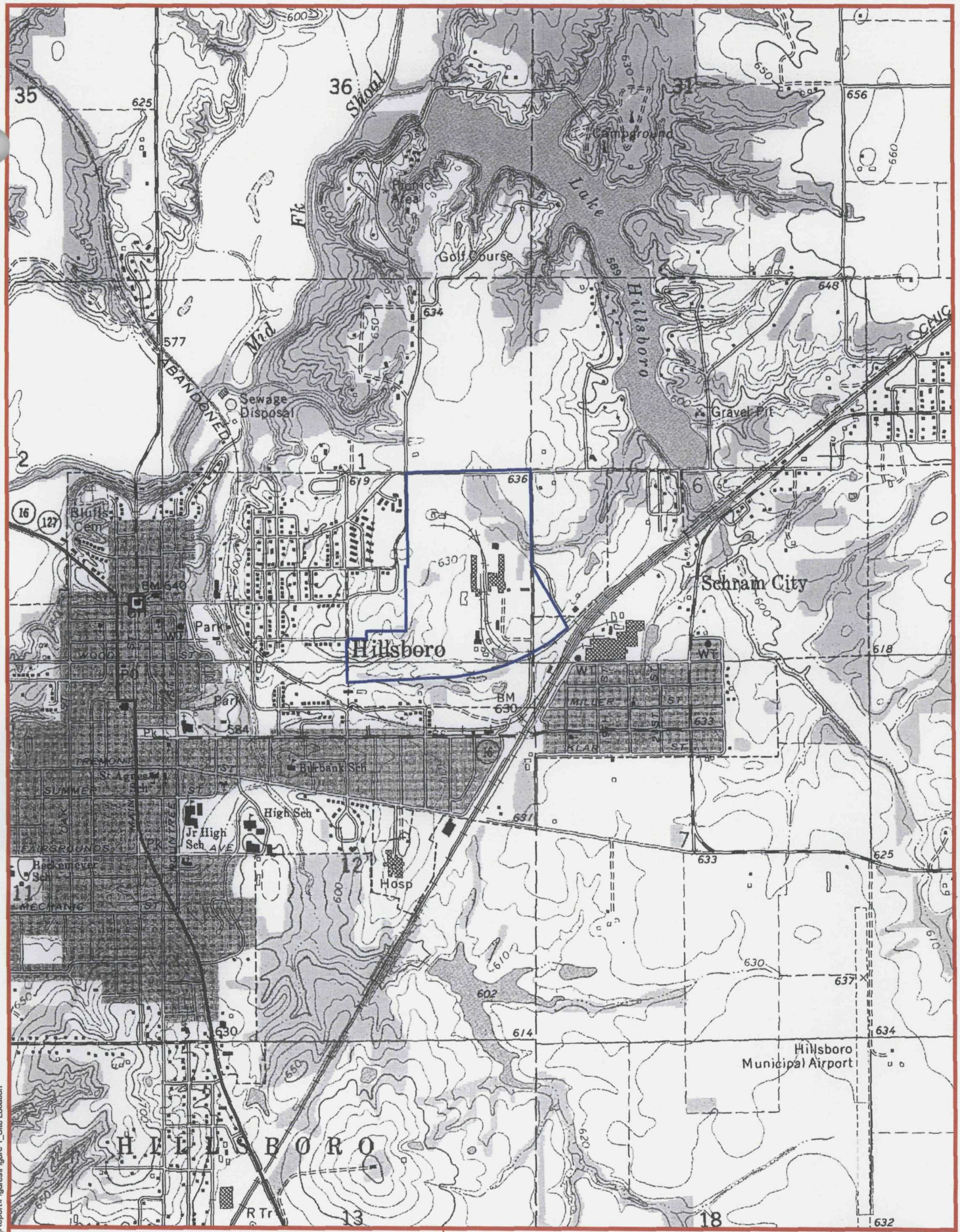
Table 7: Historical Sampling Results - Groundwater

With the exception of pH, all parameters are measured in mg/L (ppm).
Only detect values are presented. All wells sampled on December 1, 1998.

Well Number	Lab	Chloride	Cyanide	Nitrate-N	Nitrate, Nitrite	pH	Sulfate	TDS
G101	PAS	2.21				7.5	71.3	425
	IEPA	2.1			0.12	7.2	60.8	375
G102	PAS	47.9				7.4	271	700
	IEPA	66.9				7.4	240	650
G103	PAS	51.1		0.7		7.3	319	1020
	IEPA	72.6			0.57	7.5	578	610
G104	PAS	31		0.4		7.5	470	995
	IEPA	45.9			0.39	7.2	673	701
G105	PAS	14.6				7.5	171	535
	IEPA	19.8				7.2	171	484
G106	PAS	23.4		0.3		7.5	398	895
	IEPA	30.3				7.9	621	628
G106 (Duplicate)	PAS	23		0.3		7.4	400	905
G107	PAS	11.5				7.2	410	790
	IEPA							
G108	PAS	11.2		0.1		7	231	675
	IEPA	16.7				7.4	204	501
G109	PAS	1.12		0.3		7.7	48	185
	IEPA				0.25	6.9	40.9	203

Source: Monitoring Well Installation and GW Sampling Interim Report, March 1999

FIGURES



ENVIRON

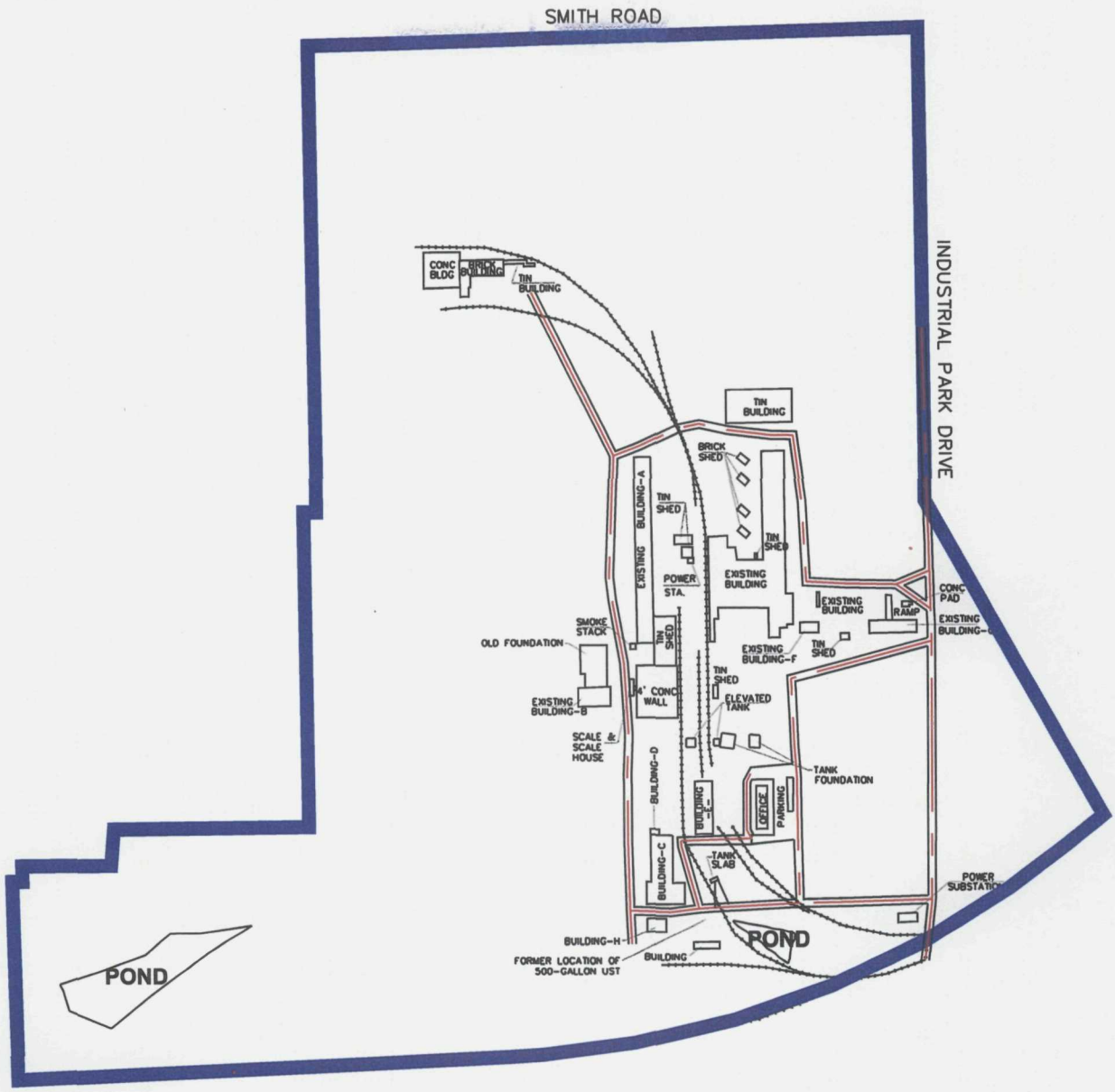
740 Waukegan Road, Suite 401, Deerfield, IL 60015

Site Location Map
Eagle Zinc
Hillsboro, Illinois

Figure
1

Drafter: CJG | Date: 01/23/02 | Contract Number: 21-7400D | Approved: | Revised:

CPF\Eagle Z...Report\Figures\Figure 1_Site Location



APPROX. SCALE (ft.)

0 500

ENVIRON 740 Waukegan Road, Suite 401, Deerfield, IL 60015	Site Layout Eagle Zinc Hillsboro, IL	Figure 2

Drafter: CJG Date: 1/24/02 Contract Number: 21-7400D Approved: Revised:

CP\E\Eagle Z...Report\Acad\Figure 2_Site Layout

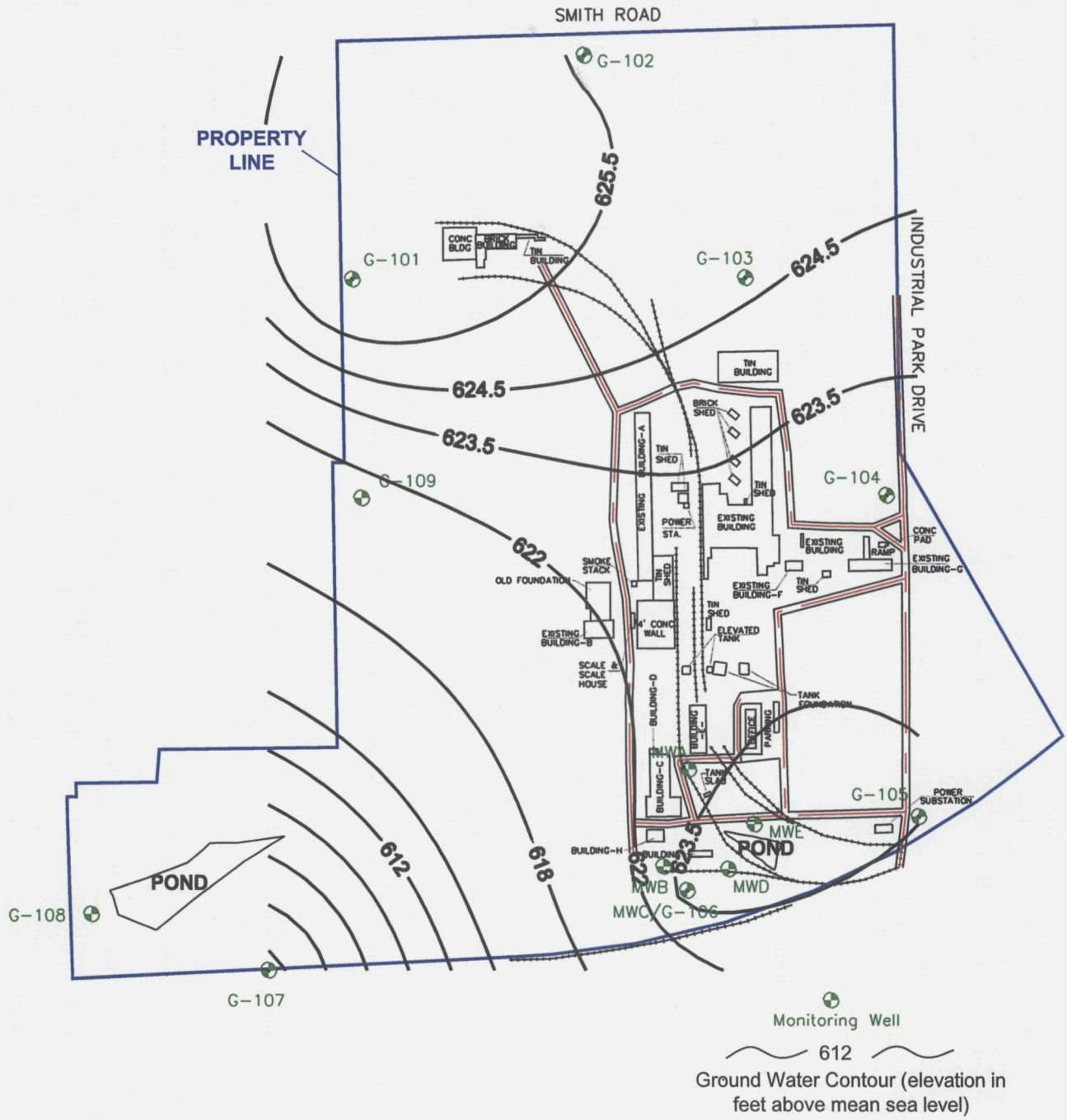
CPF\Eagle Zinc\PSE Report\Figure 3_Topo Survey Map

ENVIRON

740 Waukegan Road, Suite 401, Deerfield, IL 60015

Topographic Survey Map
Eagle Zinc
Hillsboro, IL

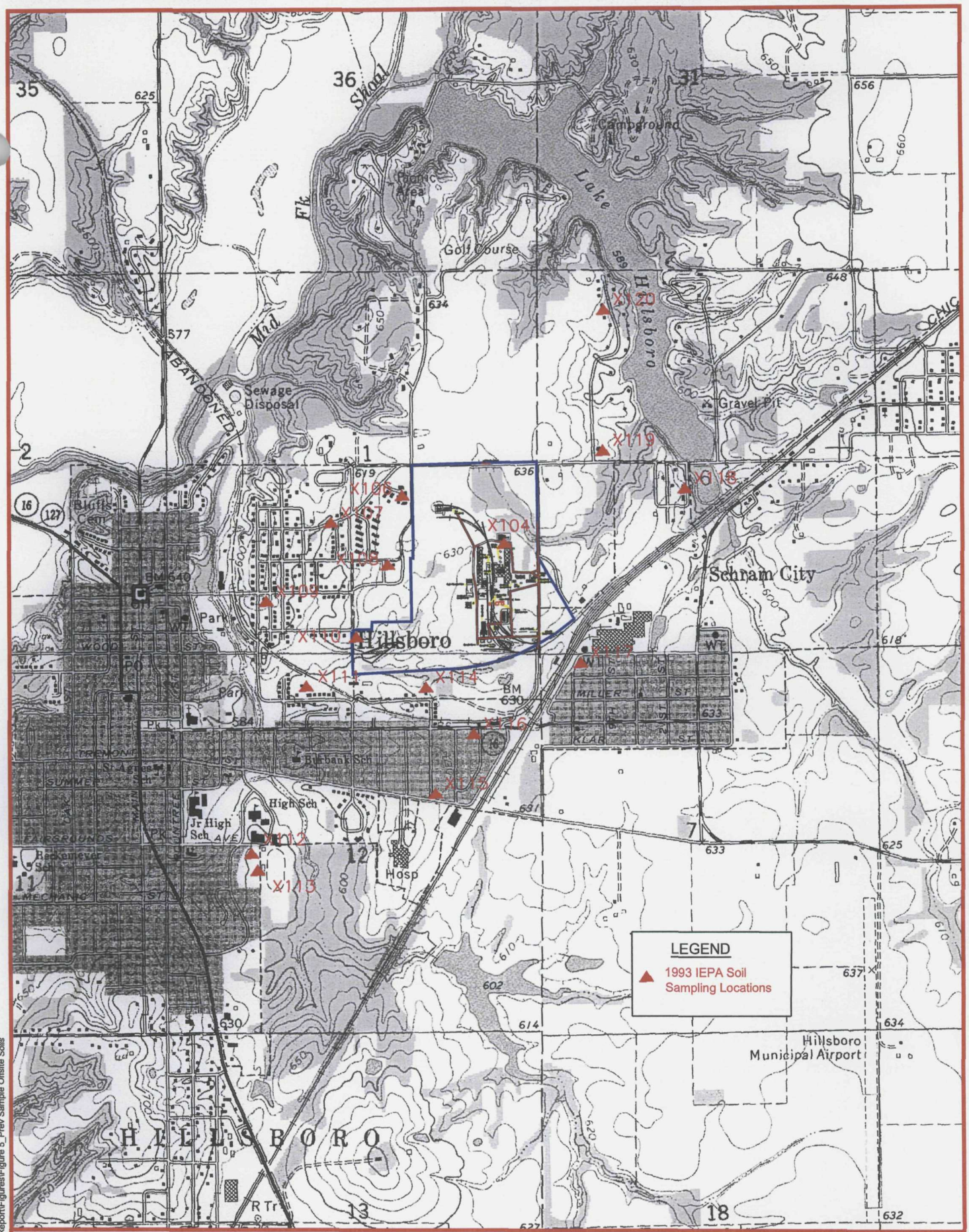
DATE:	CONTRACT NUMBER:		FIGURE
01/23/02	21-7400D		3
DRAFTER: CJG	APPROVED:	REVISED:	



CPF\Eagle Zinc Report\Figures\Figure 6_Prev Sample Onsite Soils

ENVIRON 740 Waukegan Road, Suite 401, Deerfield, IL 60015	Shallow Ground Water Contour Map Eagle Zinc, Hillsboro, Illinois	Figure 4

Drafter:	CJG	Date:	01/23/02	Contract Number:	21-7400D	Approved:	Revised:



ENVIRON

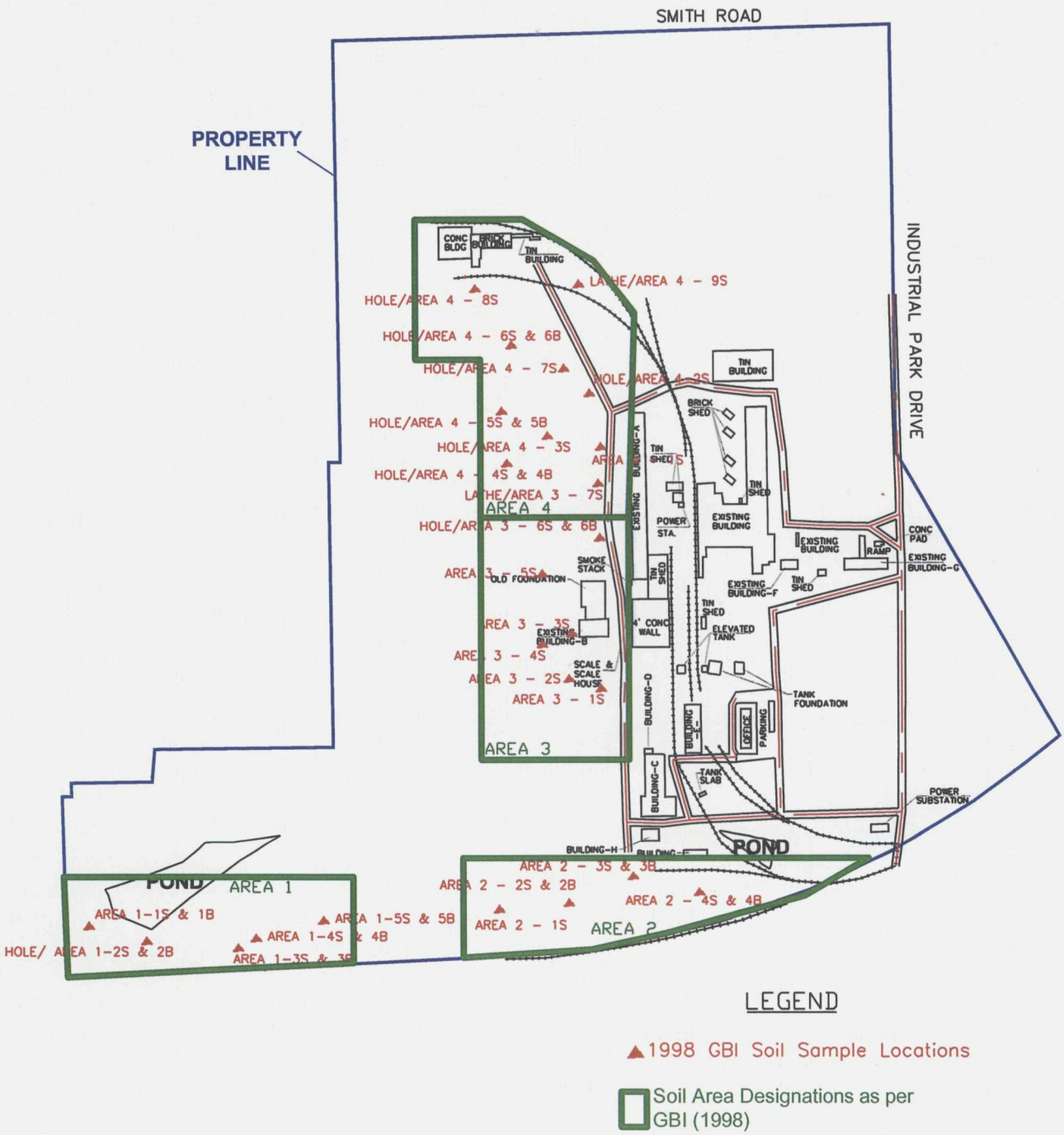
740 Waukegan Road, Suite 401, Deerfield, IL 60015

Previous Sampling Locations
Off-Site Soil
Eagle Zinc, Hillsboro, Illinois

Figure
5

Drafter: CJG | Date: 01/23/02 | Contract Number: 21-7400D | Approved: | Revised:

CPF\Eagle Z...\Report\Figures\Figure 5_Prev Sample Offsite Soils



CP:\Eagle Zi...eport\Figures\Figure 6_Prev Sample Onsite Soils

ENVIRON

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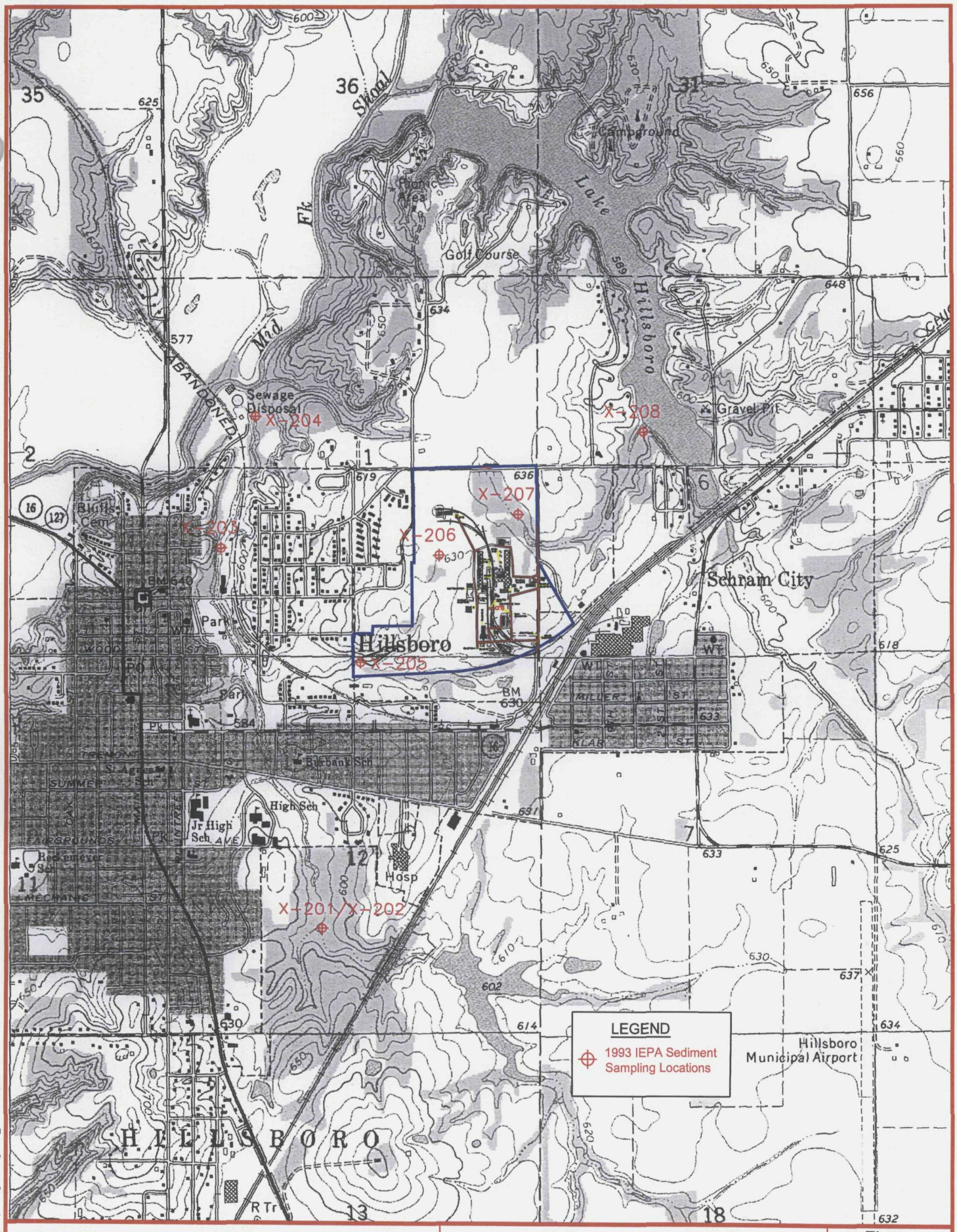
Previous Sampling Locations
On-Site Soil
Eagle Zinc, Hillsboro, Illinois

Figure
6

Drafter: CJG | Date: 01/23/02 | Contract Number: 21-7400D | Approved: | Revised:



ENVIRON

740 Waukegan Road, Suite 401, Deerfield, IL 60015

Previous Sampling Locations
Sediments
Eagle Zinc, Hillsboro, Illinois

Figure 7

Drafter: CJG | Date: 01/23/02 | Contract Number: 21-7400D | Approved: | Revised:

CPFIEalge Z...Report\Figures\Figure 7_Prev Sample Sediment

Approximate Location of Piles identified in undeveloped areas

Rotary Residue Type 1

Rotary Clean Out

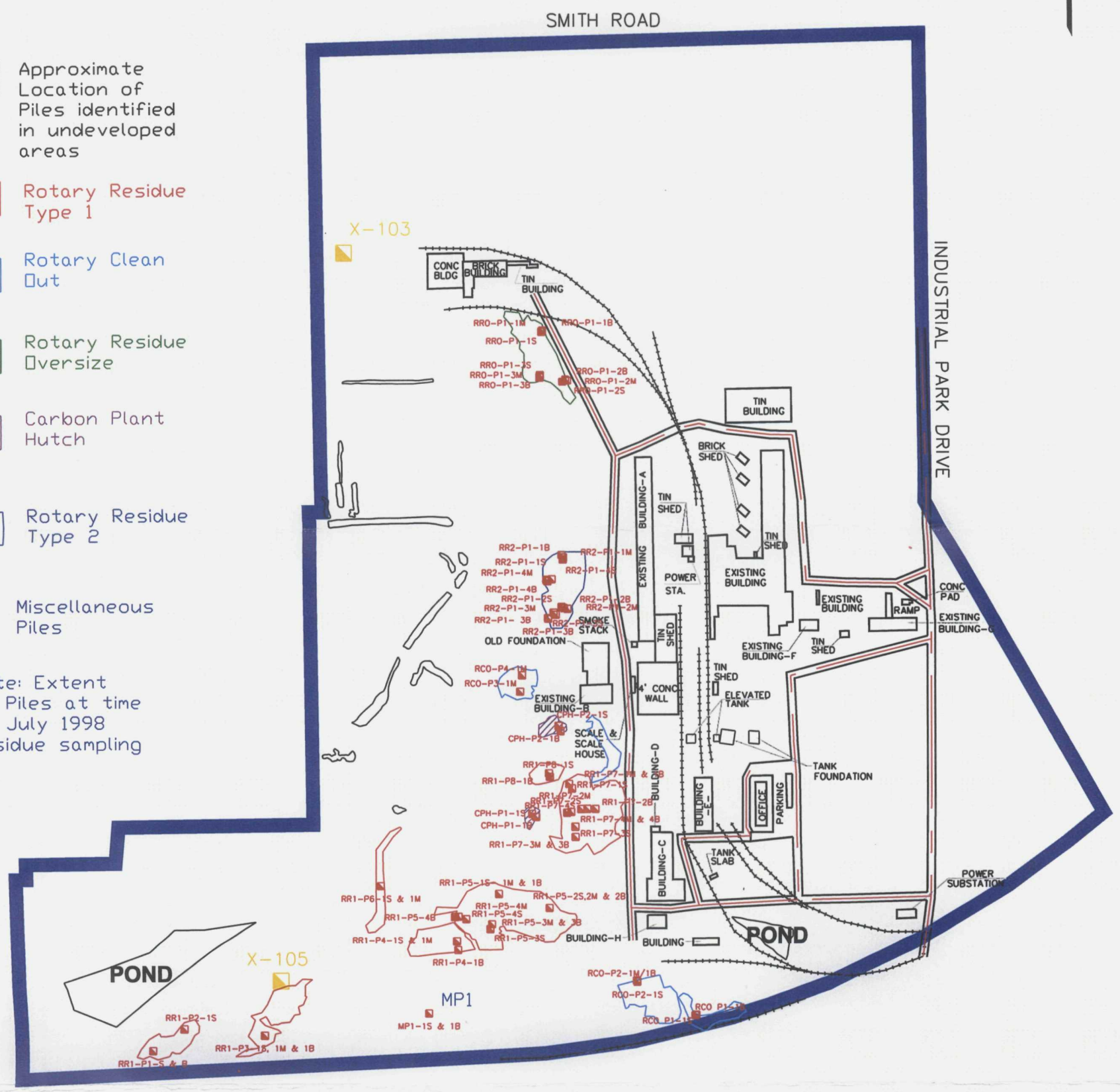
Rotary Residue Oversize

Carbon Plant Hutch

Rotary Residue Type 2

MP1 Miscellaneous Piles

Note: Extent of Piles at time of July 1998 residue sampling



LEGEND

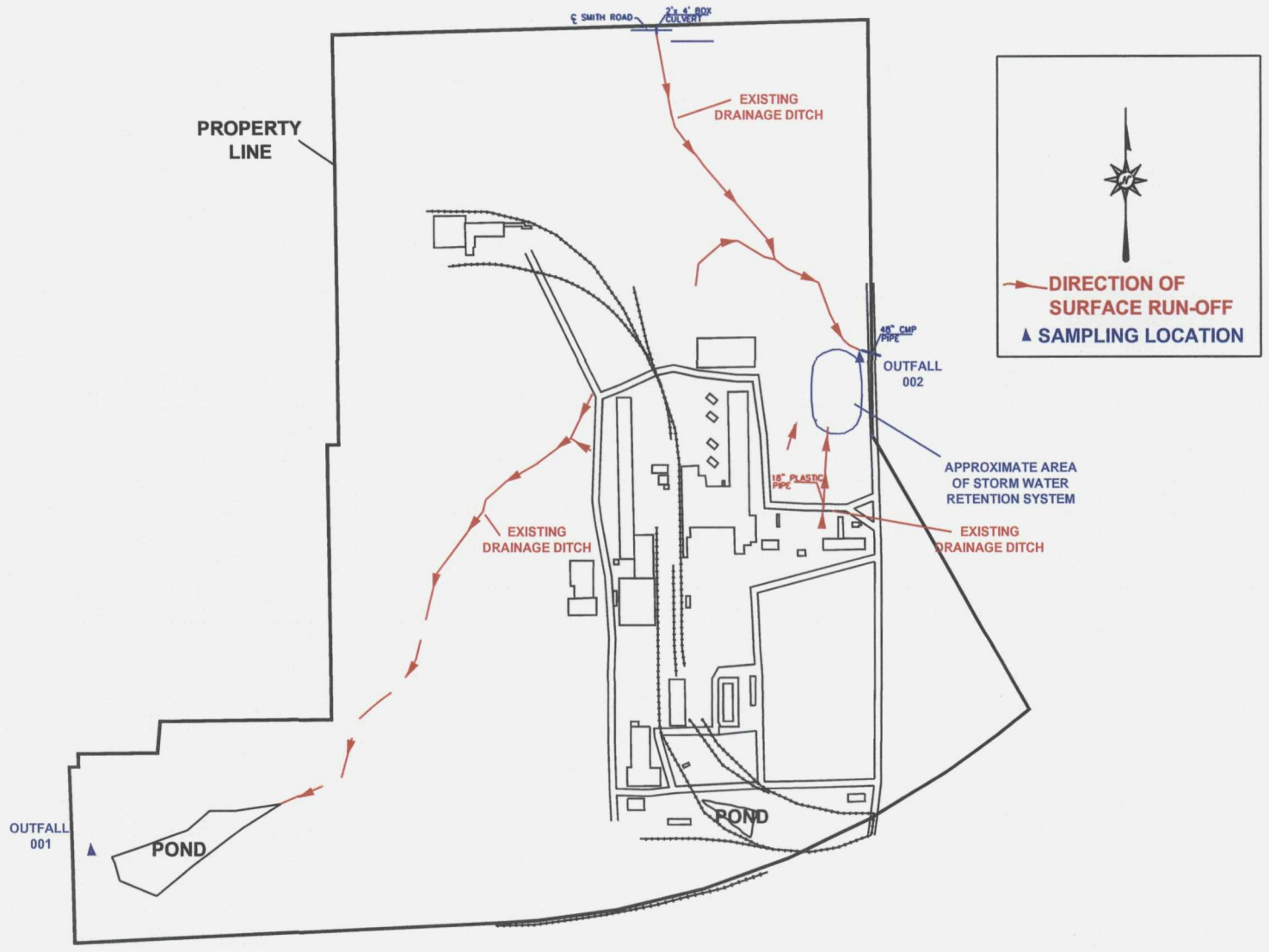
1993 Residue Pile Samples

1998 Residue Pile Samples

CPF\Ealge Zinc\PSE Report\Figures\Figure 8_Prev Sample Residues

ENVIRON 740 Waukegan Road, Suite 401, Deerfield, IL 60015	Previous Sampling Locations Residues Eagle Zinc, Hillsboro, Illinois	Figure 8

Drafter: CJG Date: 01/23/02 Contract Number: 21-7400D Approved: Revised:



CPF\Eolge Zinc\PSE Report\Figures\Figure 9_Prev Sample Surface Water

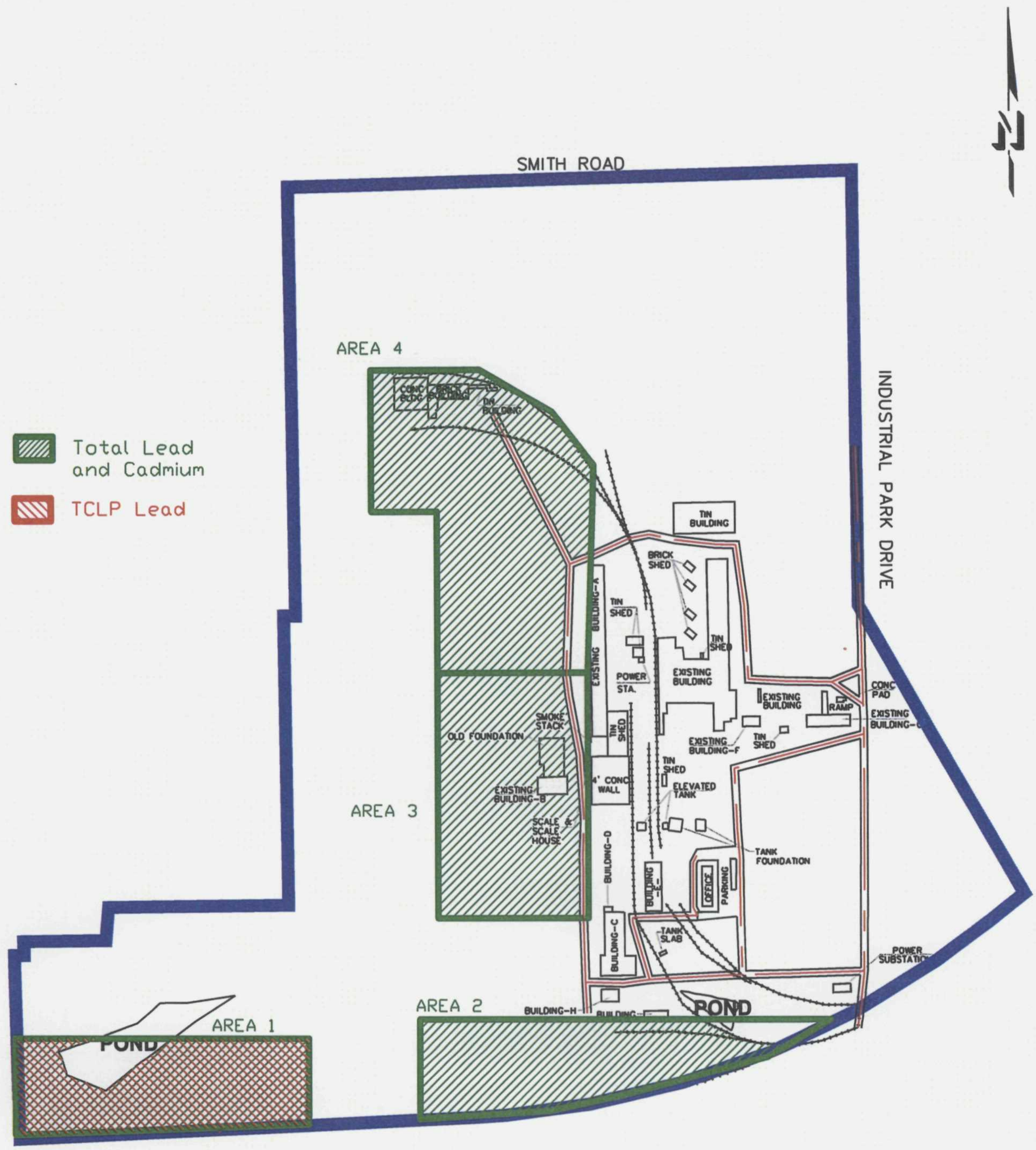
ENVIRON

740 Waukegan Road, Suite 401, Deerfield, IL 60015

Previous Sampling Locations
Storm Water
Eagle Zinc, Hillsboro, IL

Figure 9

Drafter:	CJG	Date:	01/23/02	Contract Number:	21-7400D	Approved:	Revised:



CPF\Eagle Zi... Report\Figures\Figure 10_Potential AOCs Onsite Soil

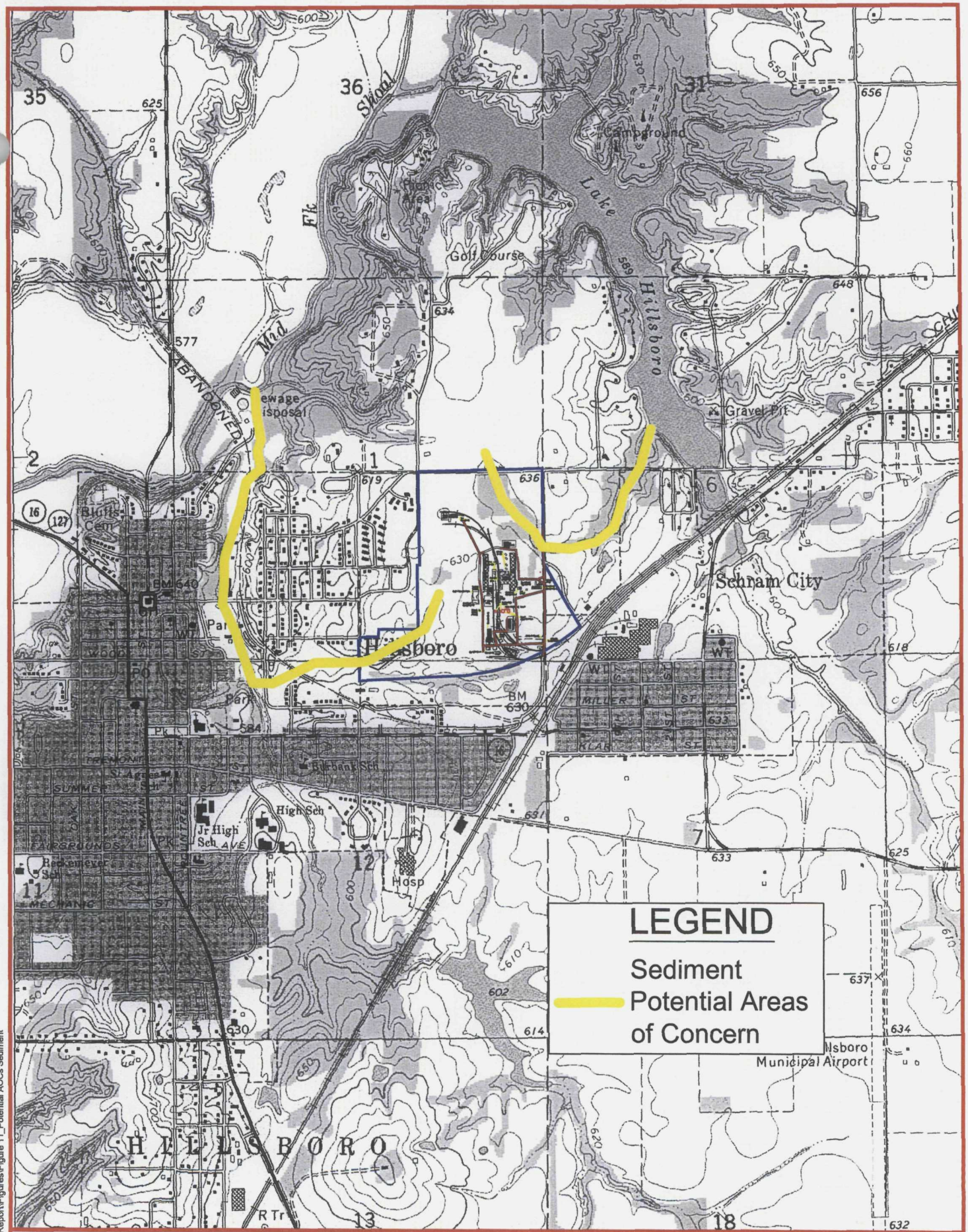
ENVIRON

740 Waukegan Road, Suite 401, Deerfield, IL 60015

Potential Areas of Concern
On-Site Soil
Eagle Zinc, Hillsboro, Illinois

Figure 10

Drafter: CJG | Date: 01/23/02 | Contract Number: 21-7400D | Approved: | Revised:



CPF\Eaige Z Report\Figures\Figure 11_Potential AOCs Sediment

ENVIRON

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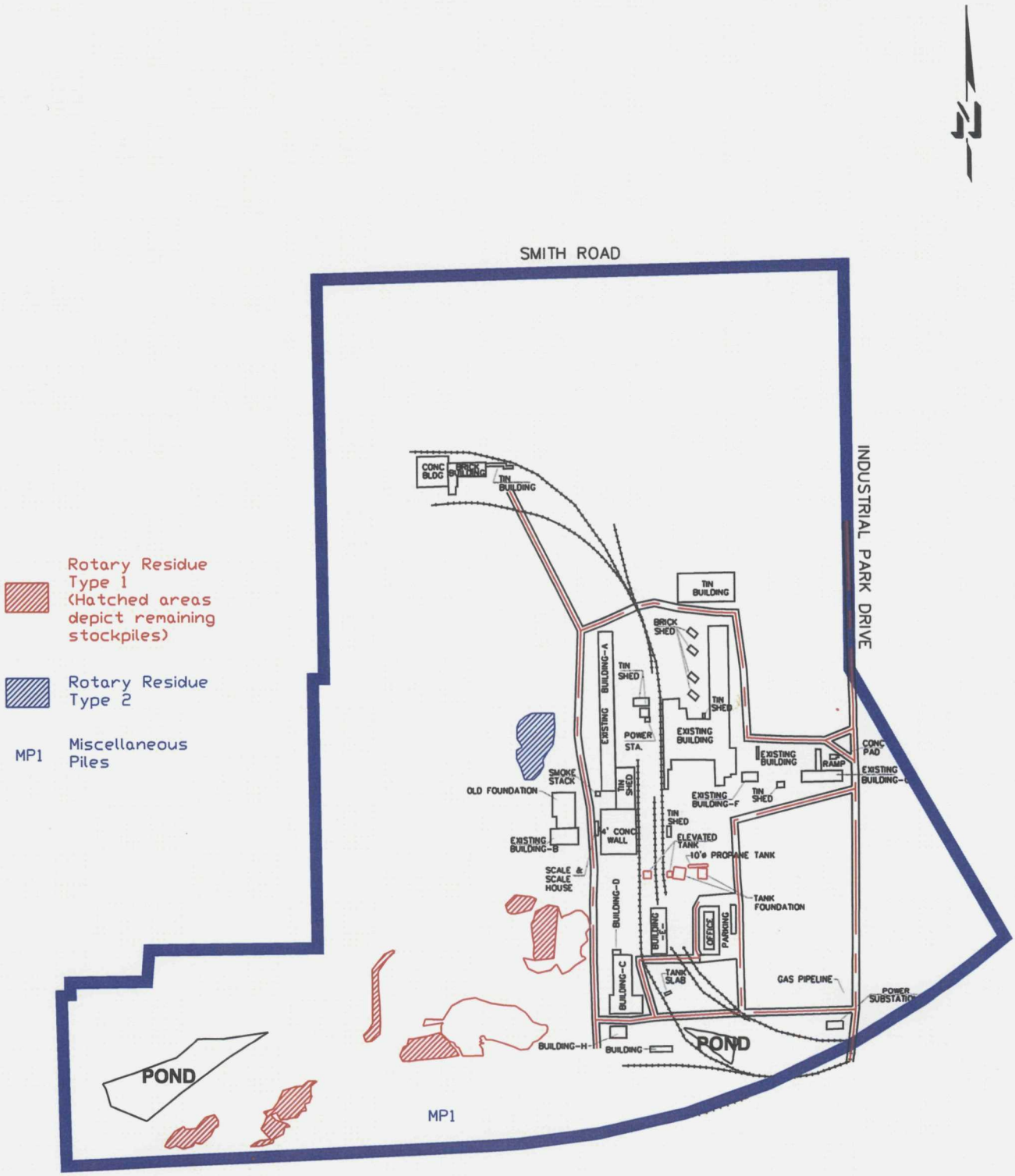
Potential Areas of Concern
Sediment
Eagle Zinc, Hillsboro, Illinois

Figure
11

Drafter: CJG | Date: 01/23/02 | Contract Number: 21-7400D | Approved: | Revised:



CP:\Eaige Z...\Report\Figures\Figure 12_Potential AOCs Residue

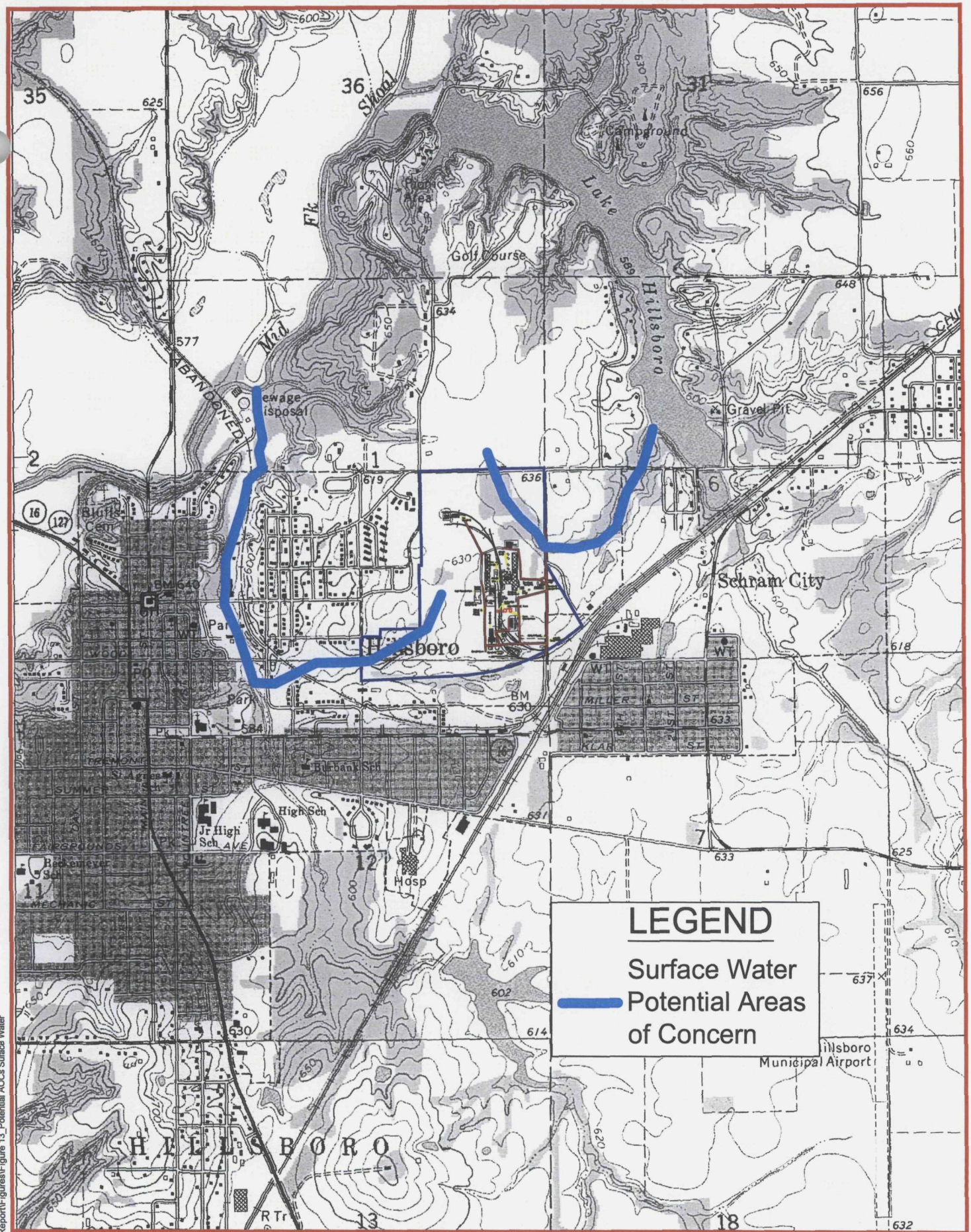
ENVIRON

740 Waukegan Road, Suite 401, Deerfield, IL 60015

Potential Areas of Concern
Residues
Eagle Zinc, Hillsboro, Illinois

Figure
12

Drafter: CJG Date: 01/23/02 Contract Number: 21-7400D Approved: Revised:



ENVIRON

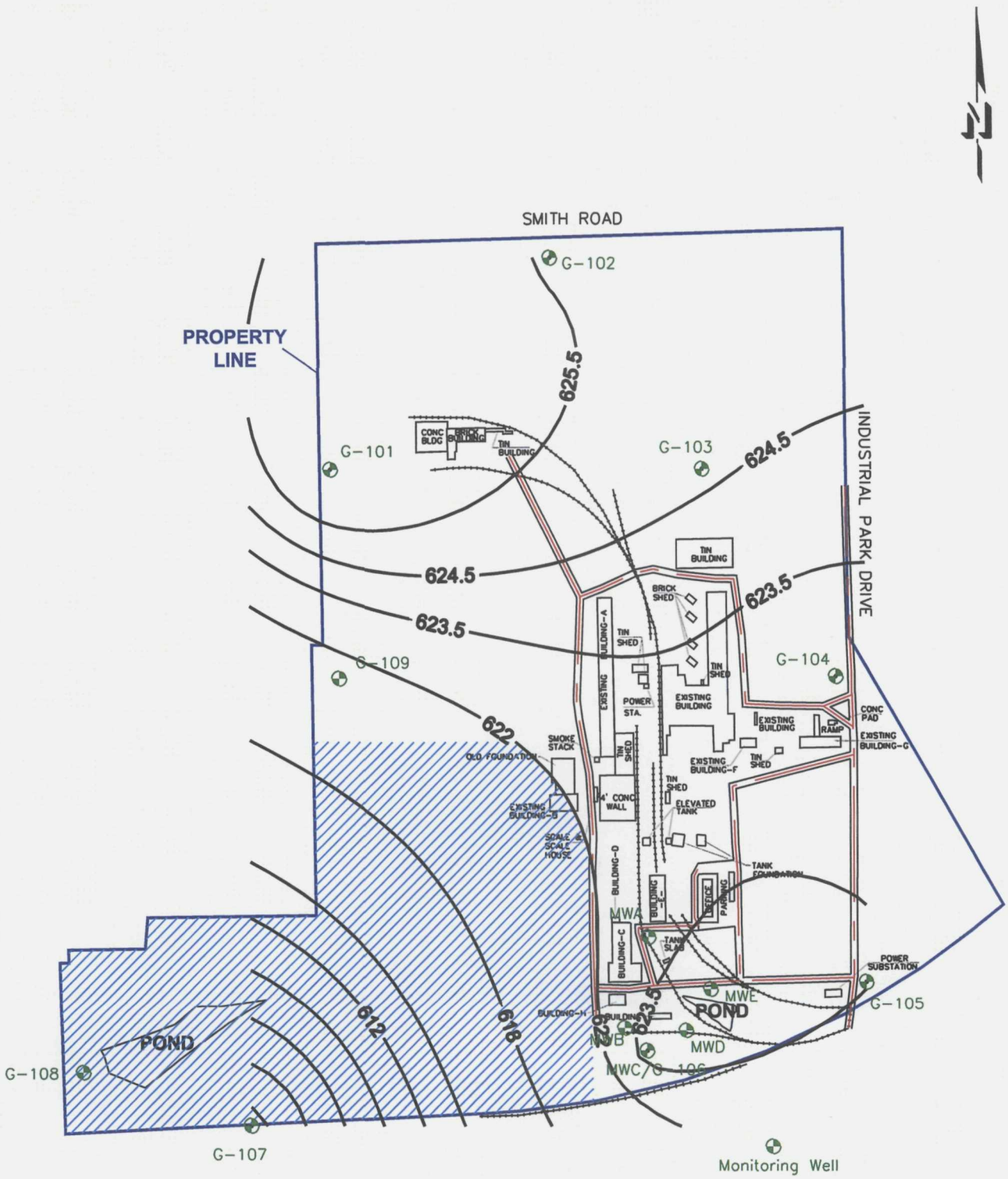
740 Waukegan Road, Suite 401, Deerfield, IL 60015

Potential Areas of Cocern
Surface Water
Eagle Zinc, Hillsboro, Illinois

Figure
13

Drafter: CJG Date: 01/23/02 Contract Number: 21-7400D Approved: Revised:

CPF\Eaige Z... Report\Figures\Figure 13_Potential AOCs Suface Water



ENVIRON

740 Waukegan Road, Suite 401, Deerfield, IL 60015

Potential Areas of Concern
Ground Water
Eagle Zinc, Hillsboro, Illinois

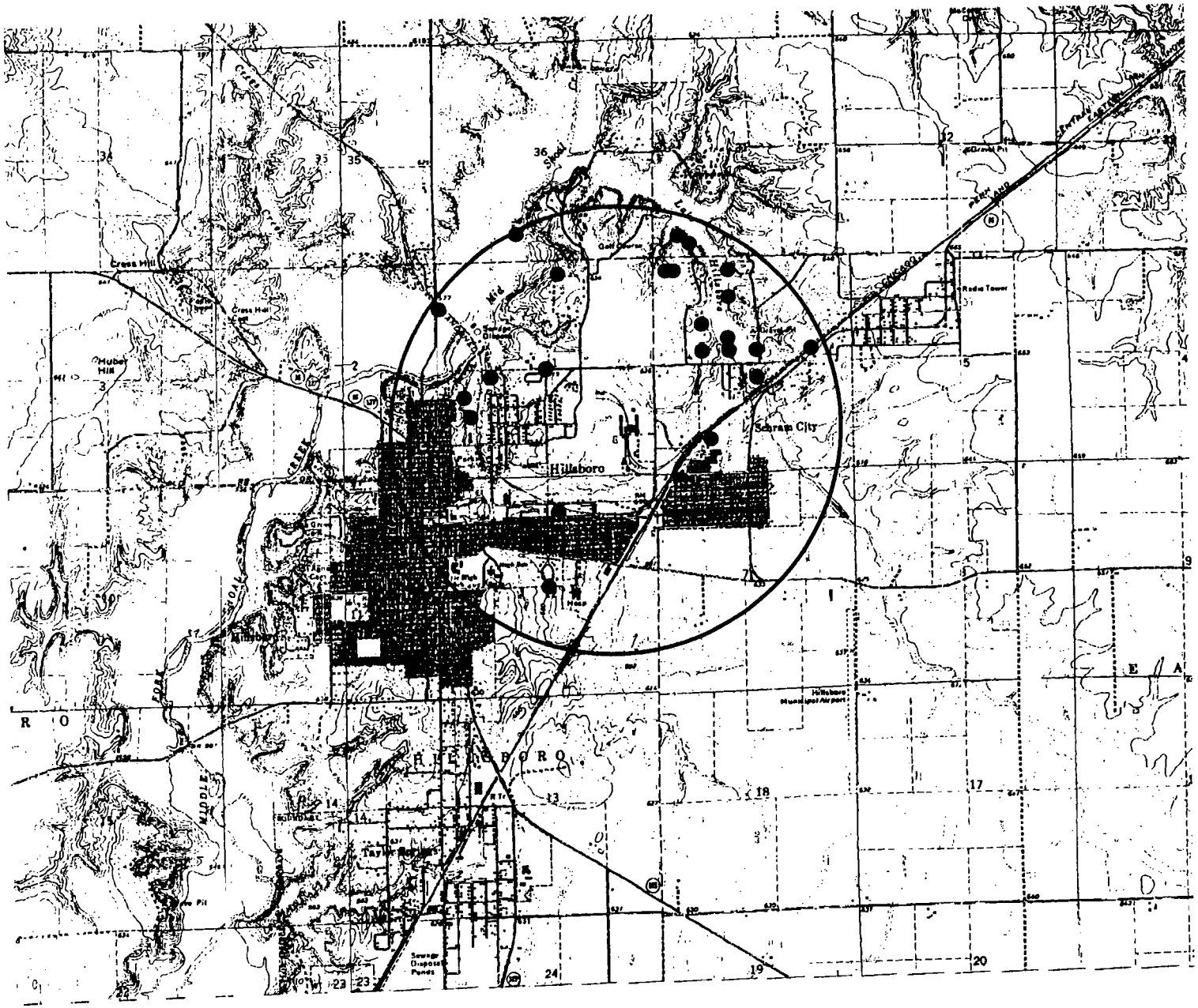
Figure
14

Drafter: CJG | Date: 01/28/02 | Contract Number: 21-7400D | Approved: | Revised:

CP\Eagle Z...Report\Figures\Figure14_ Potential AOCs Ground Water

ATTACHMENT A
Results of ENVIRON Well Search

One Mile Well Search
Eagle Zinc
Hillsboro, Illinois



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

RENEE CIPRIANO, DIRECTOR

217/782-1020

01/18/2002

Christopher Greco
Environ
740 Waukegan Rd., Ste. 401
Deerfield, IL 60015-

Re: Request Regarding the Location of community water supply wells in Montgomery County, Illinois. (FOIA NO: 2002P0033)

Dear Christopher Greco:

This letter responds to your written inquiry received in Public Water Supplies on 01/14/2002 regarding your project area located in the SE ¼ of Section 1 and the NE ¼ of Section 12, T8N, R4W and the SW ¼ of Section 6, T8N, R3W.

You requested information pertaining to the nearest community water supply well. Based upon the information provided, the project area appears to be located outside 2,500 feet from a community water supply well.

Effective September 1st, 2001, the Pleasant Valley Public Water District, in Peoria County, is the first regulated recharge area to designate a defined area with specific regulations in place for the area contributing groundwater to its public water supply wells pursuant to section 17.3 of the Illinois Environmental Protection Act (Act). Further, Class III Special Resource Groundwaters has been listed by the Illinois Pollution Control Board with respect to the contribution to Parker Fen in McHenry County.

The Illinois Department of Public Health should be contacted at (217) 782-5830 in regards to the regulations concerning private, semi-private or non-community public water supply wells and the Illinois State Water Survey should be contacted at (217) 333-9043 in regards to the location of these wells. I trust that this meets your needs. Should you require any further information, please feel free to contact me at the above referenced number.

Sincerely,

Janet Christer

Janet Christer
FOIA Coordinator, Manager's Office
Division of Public Water Supply
Bureau of Water

cc: File

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Illinois State Water Survey

Main Office • 2204 Griffith Drive • Champaign, IL 61820-7495 • Tel (217) 333-2210 • Fax (217) 333-6540
Peoria Office • P.O. Box 697 • Peoria, IL 61652-0697 • Tel (309) 671-3196 • Fax (309) 671-3106
Groundwater Section • Tel (217) 333-4300 • Fax (217) 244-0777

SWS

January 11, 2002

Mr. Chris Greco
Environ
740 Waukegan Road, Suite 401
Deerfield, IL 60015

Dear Mr. Greco:

As you requested during our telephone conversation on January 11, we are enclosing printouts from our Private Well and Public, Industrial, Commercial Survey (PICS) Databases for the following locations in Montgomery County:

Township	Range	Sections
8 North	4 West	1, 12
8 North	3 West	6

No available information is indicated on the printout by the statement "0 records were found for the specified locations." Also enclosed is an explanation of the Illinois State Water Survey Private Well Database.

The data included in the Private Well Database are those non-municipal wells which are known to the Illinois State Water Survey, and the PICS Database is an inventory of municipal well information and large industrial groundwater users. We may not have a copy of well records for these groundwater users.

The invoice accompanying this request covers the $35.00 query fee for private well information, $35.00 query fee for PICS information, and a $0.10 per page charge for 7 pages, plus a $5.00 shipping and handling fee, totaling $75.70.

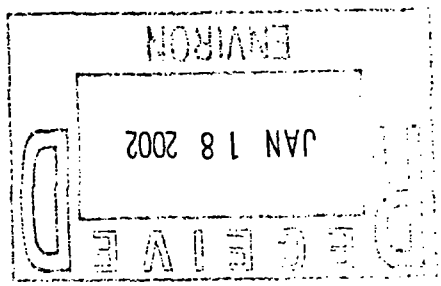
If you have any questions or if we can be of further assistance, please call.

Sincerely,

Susie Casey

Susie Dodd-Casey
Associate Supportive Scientist
Groundwater Section
Phone: (217) 333-9043

sdc/psl
Enclosures as stated



Illinois State Water Survey PICS Database

Friday, January 11, 2002

County: MONTGOMERY

Township: 08n

Range: 04w

Sections: 01,12

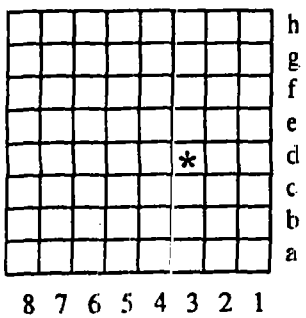
Records found: 0

Questions: Contact the Illinois State Water Survey's Ground Water Division @217-333-9043

Publication: Please cite the Illinois State Water Survey's PICS (Public-Industrial-Commercial) Database in all publications based wholly or partially on this information.

Note: The data in the PICS Database is a listing of municipal and commercial wells which are known to the Illinois State Water Survey(ISWS). This information was initially entered from public water supply data and supplemented with the Illinois Water Inventory Project data. This database is updated as additional information is received and verified.

This data cannot be resold or redistributed. The Illinois State Water Survey must be acknowledged in any use of this material.



Location of a 10-acre-plot within a section:

The origin can be found at the lower right-hand-corner of an 8 x 8 grid. In this example, the well is in the 10-acre plot '3d'.

Illinois State Water Survey Private Well Database

Friday, January 11, 2002

County: MONTGOMERY

Township: 08n

Range: 04w

Sections: 01,12

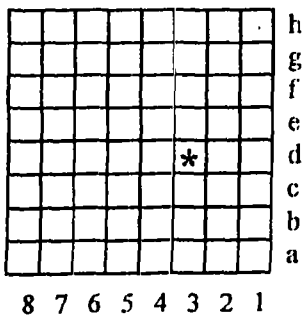
Records found: [redacted]

Questions: Contact the Illinois State Water Survey's Ground Water Division @217-333-9043

Publication: **Please cite the Illinois State Water Survey's Private Well Database in all publications based wholly or partially on this information.**

Note: The data in the Private Well Database is a listing of non-municipal wells which are known to the Illinois State Water Survey(ISWS). This information has been entered verbatim from well logs submitted by the driller, chemical analysis reports, well sealing forms, well inventory forms from the 1930-1934 well survey, and other special projects. The accuracy of this data is controlled by those submitting the forms. Information in the Private Well Database has not been verified.

This data cannot be resold or redistributed. The Illinois State Water Survey must be acknowledged in any use of this material.



Location of a 10-acre-plot within a section:

The origin can be found at the lower right-hand-corner of an 8 x 8 grid. In this example, the well is in the 10-acre plot '3d'.

Friday, January 11, 2002

WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE DRILLED	DEPTH	RECORD TYPE	USE	WELL TYPE	AQUIFER TYPE	STAT LVL	PU' LV	PUMP GPM
113897	135	08N	04W	01				00/00/1924	22	RG	DO	—	—			
113898	135	08N	04W	01				00/00/1926	23	RG	DO	—	—			
113899	135	08N	04W	01				00/00/1926	60	RG	DO	—	—			
237419	135	08N	04W	01		CITY OF HILLSBURO HIMW-101	CRANK	09/10/1992	21	RG	MO	–	UN	6		
237420	135	08N	04W	01		CITY OF HILLSBURO HIMW-102	CRANK	09/10/1992	20	RG	MO	–	UN	6		
237421	135	08N	04W	01		CITY OF HILLSBURO HIMW-103	CRANK	09/10/1992	18	RG	MO	–	UN	8		
237422	135	08N	04W	01		CITY OF HILLSBURO HIMW-104	CRANK	10/26/1992	14	RG	MO	–	UN	7		

Illinois State Water Survey PICS Database

Friday, January 11, 2002

County: MONTGOMERY

Township: 08n

Range: 03w

Sections: 06

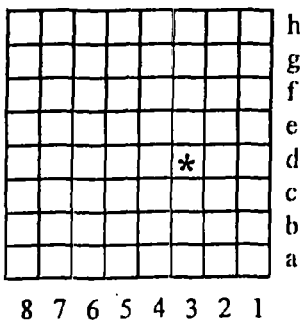
Records found: 0

Questions: Contact the Illinois State Water Survey's Ground Water Division @217-333-9043

Publication: **Please cite the Illinois State Water Survey's PICS (Public-Industrial-Commercial) Database in all publications based wholly or partially on this information.**

Note: The data in the PICS Database is a listing of municipal and commercial wells which are known to the Illinois State Water Survey(ISWS). This information was initially entered from public water supply data and supplemented with the Illinois Water Inventory Project data. This database is updated as additional information is received and verified.

This data cannot be resold or redistributed. The Illinois State Water Survey must be acknowledged in any use of this material.



Location of a 10-acre-plot within a section:

The origin can be found at the lower right-hand-corner of an 8 x 8 grid. In this example, the well is in the 10-acre plot '3d'.

Illinois State Water Survey Private Well Database

Friday, January 11, 2002

County: MONTGOMERY

Township: 08n

Range: 03w

Sections: 06

Records found: 19

Questions: Contact the Illinois State Water Survey's Ground Water Division @217-333-9043

Publication: **Please cite the Illinois State Water Survey's Private Well Database in all publications based wholly or partially on this information.**

Note: The data in the Private Well Database is a listing of non-municipal wells which are known to the Illinois State Water Survey(ISWS). This information has been entered verbatim from well logs submitted by the driller, chemical analysis reports, well sealing forms, well inventory forms from the 1930-1934 well survey, and other special projects. The accuracy of this data is controlled by those submitting the forms. Information in the Private Well Database has not been verified.

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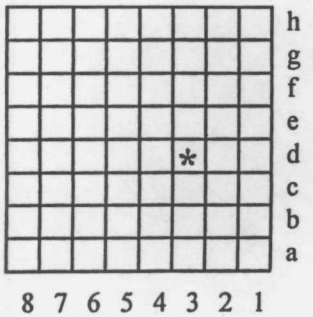


Location of a 10-acre-plot within a section:

The origin can be found at the lower right-hand-corner of an 8 x 8 grid. In this example, the well is in the 10-acre plot '3d'.

WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE DRILLED	DEPTH	RECORD TYPE	USE	WELL TYPE	AQUIFER TYPE	STAT LVL	PUMP LV	PUMP GPM
115380	135	08N	03W	06	1E	T COMPAGIN	E BEASLEY	06/05/1978	31	RG	DO	—	—			
115381	135	08N	03W	06	1H	R MONTGOMERY	C KOHNEN	07/06/1979	34	RG	DO	—	—			
115382	135	08N	03W	06	1H	B BANDOOR	G E NOLL	07/05/1978	50	RG	DO	—	—			
115383	135	08N	03W	06	1H	C SHELBAMER	E BEASLEY	11/22/1978	35	RG	DO	—	—			
115386	135	08N	03W	06	2E	K MASCOLINI	E BEASLEY	12/06/1976	21	RG	DO	—	—			
115384	135	08N	03W	06	2G	W BANDOR	H LINK	09/12/1986	36	RG	DO	—	—			
115385	135	08N	03W	06	2H	D CLAYTON	G E NOLL	05/19/1984	29	RG	DO	—	—			
115387	135	08N	03W	06	2H	D WHITE	C KOHNEN	07/30/1979	35	RG	DO	—	—			
290674	135	08N	03W	06	3F	KENNETH DEGG	WALTERS	10/09/1996	48	RG	IC	BD	UN			
115396	135	08N	03W	06	4E	R LASKET	E BEASLEY	08/12/1977	31	RG	DO	—	—			
115388	135	08N	03W	06	5E	B ROSENBERGER	E BEASLEY	04/23/1979	32	RG	DO	—	—			
115389	135	08N	03W	06	5G	J BEOLE	H LINK	08/18/1983	40	RG	DO	—	—			
115390	135	08N	03W	06	5H	L D FULLER	G BEKEMEYER	00/00/1965	18	RG	DO	—	—			
115391	135	08N	03W	06	5H	W M BANDOSS	G BEKEMEYER	08/19/1969	38	RG	DO	—	—			
115392	135	08N	03W	06	6E	E HUNTON	H LINK	10/22/1987	34	RG	DO	—	—			

Friday, January 11, 2002

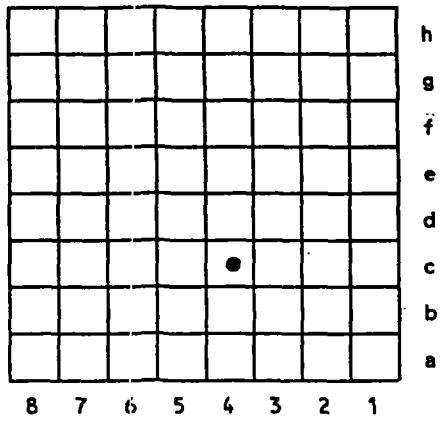
WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE DRILLED	DEPTH	RECORD TYPE	USE	WELL TYPE	AQUIFER TYPE	STAT LVL	PUMP LVL	PUMP GPM
115393	135	08N	03W	06	6F	J LETVENAS	H LINK	10/25/1987	40	RG	DO	—	—			
198886	135	08N	03W	06	6F	JOHN KUNZ	BEASLEY	05/01/1980	24	RG	DO	BD	UN			
115394	135	08N	03W	06	7H	J RAMBO	C WILSON	01/13/1976	32	RG	DO	—	—			
115395	135	08N	03W	06	8H	N MC WILLIAMS	G BEKEMEYER	06/29/1968	10	RG	DO	—	—			

ISWS 10-ACRE PLOT LOCATION SYSTEM

The following is an explanation of the ISWS Private Well Database location system.

The location system uses Township, Range, and Section. The location consists of five parts: County abbreviation, Township, Range, Section, and coordinate within the section (subsection or 10-acre plot). Sections are divided into rows of 1/8-mile squares. Each 1/8-mile square contains 10 acres and corresponds to a quarter of a quarter of a quarter section. A normal section of 1 square mile contains 8 rows of 1/8-mile squares; an odd-sized section contains more or fewer rows. Rows are numbered from east to west and lettered from south to north as shown in the diagram.

Example: St. Clair County, FIP No. 163
T2N, R10W
Section 23



The location of the well shown above is 163 2N10W-23.4c. The well point is located at the center of this 10-acre plot.

ILLINOIS STATE WATER SURVEY

PRIVATE WELL DATABASE EXPLANATION

WID	Illinois State Water Survey Identification Number
FIPS	County Code Number
TWN	Civil Township
RNG	Range
SEC	Section
PLOT	10-acre Plot Location within the Section
OWNER	Well Owner
DRILLER	Well Drilling Contractor of Well
DATE DRILLED	Date Initially Drilled
DEPTH	Depth (well to nearest ft)

RECORD TYPE

Record Type (types of information on file)

- R - Construction Report
- G - Geology
- S - Sealed
- A - Affidavit
- C - Chemical Analysis
- I - Inventory
- X - Indicates Comment in Owners Field Something Unusual
- O - Any Other Type of Record
- P - Pump Installation

USE

Well Use (two-letter code indicating the usage of the well)

- CO - Conservation
- CS - Community Supply
- DO - Domestic
- DW - De-Watering
- IC - Industrial/Commercial
- IN - Injection Well
- IR - Irrigation
- MO - Monitoring
- NC - Non-Community
- NW - Non-Well Source
- OB - Observation
- PK - Park
- RC - Recovery Well
- RW - Relief Well
- SC - School
- ST - State

USE	(Continued) TB - Test Boring TH - Test Hole TW - Test Well ~ - Unknown
WELL TYPE	Well Type (two-letter code indicating the type of well) BLANK - Assumed Drilled BD - Bored DL - Drilled DU - Dug (Being Phased Out) DR - Driven NW - Non-Well SP - Sand Point SG - Spring ~ - Assumed Drilled or Possibly Unknown
AQUIFER TYPE	Aquifer Type (two-letter code indicating aquifer type) BR - Bedrock DH - Dry Hole SW - Surface Water UN - Unconsolidated ~ - Unknown
STAT LVL	Static Level - Reported non-pumping water level
PUMP LVL	Pumping Level - Reported water level during initial pumping of the well
PUMP GPM	Pumping GPM - Gallons per minute at time of well construction

THE DATA IN THE PRIVATE WELL DATABASE IS A LISTING OF THE NON-COMMUNITY WELLS WHICH ARE KNOWN TO THE ILLINOIS STATE WATER SURVEY (ISWS). THIS INFORMATION HAS BEEN ENTERED VERBATIM FROM WELL LOGS SUBMITTED BY THE DRILLER, FROM CHEMICAL ANALYSIS REPORTS, FROM WELL SEALING FORMS, OR WELL INVENTORY FORMS FROM THE 1930-34 WELL SURVEY AND OTHER SPECIAL PROJECTS. THE ACCURACY OF THIS DATA IS CONTROLLED BY THOSE WHO SUBMITTED THE FORM. INFORMATION IN THE PRIVATE WELL DATABASE HAS NOT BEEN VERIFIED.

INVOICE

ILLINOIS STATE WATER SURVEY
2204 Griffith Drive
Champaign, IL 61820-7495
(217) 333-4300
Fax: (217) 244-0777

SOLD TO:
Mr. Chris Greco
Environ
740 Waukegan Road, Suite 401
Deerfield, IL 60015

SHIP TO:

INVOICE NUMBER: GW02-15
INVOICE DATE: January 14, 2002
CUSTOMER REF. NO.:

SALES PERSON: sdc

DESCRIPTION	AMOUNT
Private Well Database Query	$35.00
PICS Database Query	$35.00
Page charge for 7 pages @ $0.10	$0.70
SUBTOTAL	$70.70
S & H	$5.00
TOTAL DUE	$75.70

MAKE CHECK PAYABLE TO: IL STATE WATER SURVEY
Attention: Administration
NET 30 DAYS
Please return *COPY* with payment

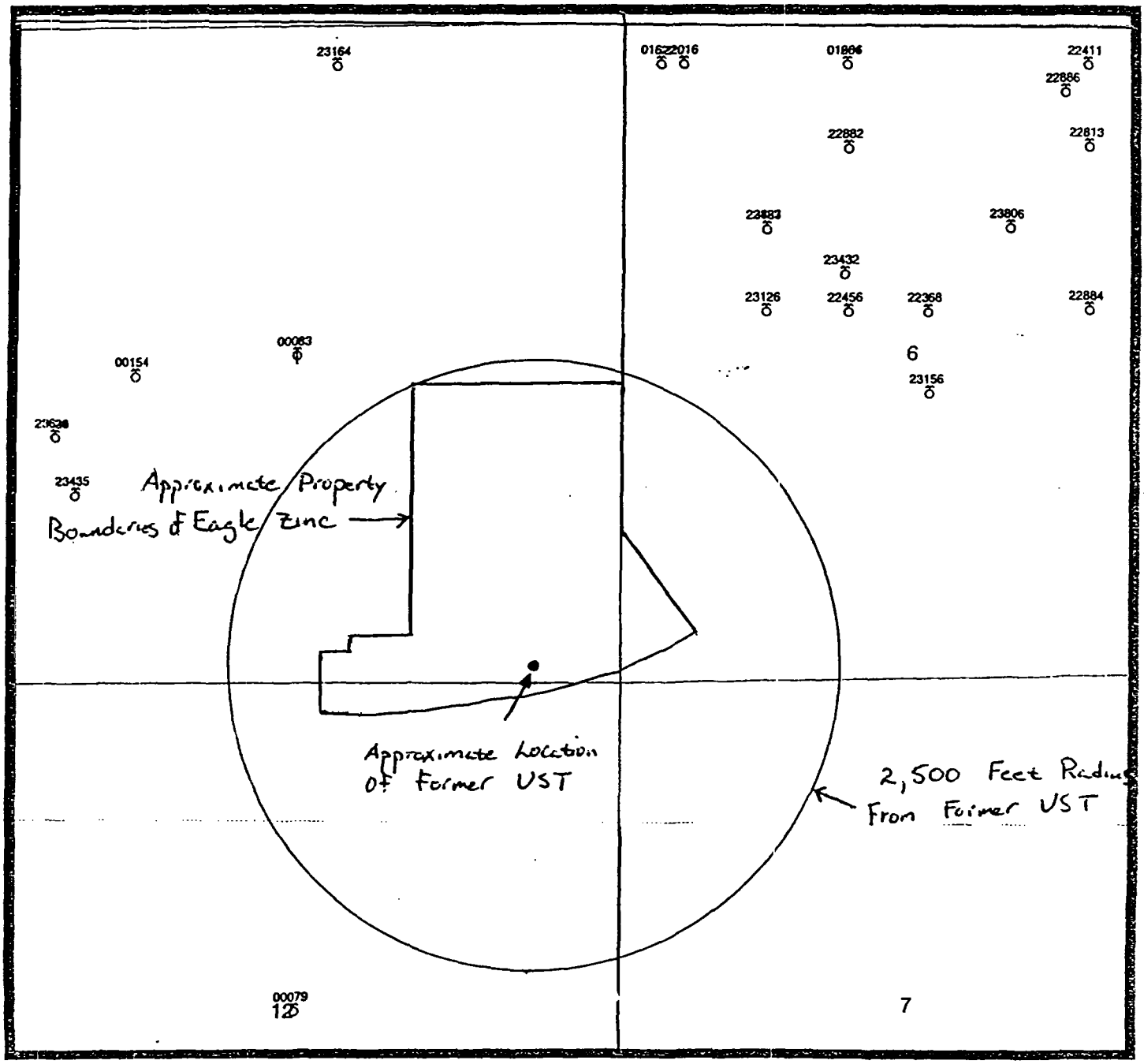
For Accounting Use Only: Credit Acct. #1-3-60977-002, Dept. G

ATTACHMENT B
Results of Previous Well Searches

Illinois Geological Survey Water Well Search

Figure

Map Area: 8N-4W-12 m3 to 9N-3W-31 m3



Explanation

Oil	Gas Injection	Junked
Oil & Gas	Gas Storage	Temporarily Abandoned
Gas	Salt Water Disposal	Observation
D&A - Oil Show	Water Injection	Other Injection
D&A - Gas Show	Water Supply	Confidential
D&A - Oil & Gas Show	Permit	Other Well Type
D&A	Water	Status Unknown

/ through any symbol indicates well is currently plugged

N

0 1209 2418 ft

Illinois State Geological Survey

QuEStoR: Custom Map

Date: 28-JUN-00 Scale: 1:14508

Displayed data is based upon information supplied to the Illinois State Geological Survey (ISGS) and are not field verified. The ISGS does not guarantee the validity, accuracy or completeness of these data.

Non Oil and Gas - Wells

121352281300 Link, Harold F. 6- 8N- 3W
Montgomery Bandor, William
Status: WATER SW NE NE Elev: 0
permit: 126708 permit date: 09/10/86 comp. date: 09/12/86
Lambert X: 3011264 Lambert Y: 2238140 td: 36
producing formation: td formation:
latitude: 39.170697 longitude: 89.459721
Water from sand at depth 18 to 36 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PLASTIC	0	10
36	CONCRETE	0	36

Size hole below casing: 0 in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	13	13
gravely clay	5	18
sand	18	36

121350166600 Bekemeyer, Gust 6- 8N- 3W
Montgomery Bandor, Wm
Status: WATER NE NE NW Elev: 0
permit: permit date: comp. date: 08/19/69
Lambert X: 3009280 Lambert Y: 2238792 td: 38
producing formation: td formation:
latitude: 39.172499 longitude: 89.467089
Water from sand at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
48	CONCRETE	1	38

Size hole below casing: in.
Static level 20 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	20	20
sand	6	26
clay	12	38

121352288200 Link, Harold F. 6- 8N- 3W
Montgomery Berle, James
Status: WATER SE NE NW Elev: 0
permit: 108354 permit date: 07/28/83 comp. date: 08/18/83
Lambert X: 3009284 Lambert Y: 2238134 td: 40
producing formation: td formation:
latitude: 39.170685 longitude: 89.466079
Water from gravel at depth 16 to 20 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PLASTIC	0	10
36	CONCRETE	0	40

Size hole below casing: 0 in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	16	16
gravel & clay mix	4	20
clay	6	26
gray clay	14	40

121352241100 Noll, Gary E. 6- 8N- 3W
Montgomery Clayton, Debby
Status: WATER NW NE NE Elev: 0
permit: 110792 permit date: 12/09/82 comp. date:
Lambert X: 3011260 Lambert Y: 2238792 td: 29
producing formation: td formation:
latitude: 39.172497 longitude: 89.459734
Water from clay at depth 0 to 0 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
30	CONCRETE	0	30

Size hole below casing: 0 in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	29	29

121352380600 Walters, Steven 6- 8N- 3W
Montgomery Degg, Kenneth
Status: WATER NE SW NE Elev: 0
permit: permit date: 08/30/96 comp. date: 10/09/96
Lambert X: 3010608 Lambert Y: 2237484 td: 48
producing formation: td formation:
latitude: 39.168887 longitude: 89.462382
Water from gravel - gray sand at depth 24 to 45 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PLASTIC	0	11
36	CONCRETE	0	48

Size hole below casing: in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	6	6
red sandy clay	3	9
gravelly clay	7	16
hardpacked gravelly clay	8	24
hardpacked gravel	5	29
gray gravelly clay	10	39
layered gray gravelly sand & gray clay	6	45
gray gravelly clay	3	48

121352343200 Hayes, C.M. 6- 8N- 3W
Montgomery Ewald 1-59
Status: WTST 2000 NL 3000 EL NE Elev: 0
permit: permit date: comp. date:
Lambert X: 3009260 Lambert Y: 2237121 td: 0
producing formation: td formation:
latitude: 39.167886 longitude: 89.467162
Water from at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)

Size hole below casing: in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
S.S. #33227 (110-165')	0	0

121350120100 Bekemeyer, Gust 6- 8N- 3W
Montgomery Fuller, Drix
Status: WATER NE NE NW Elev: 0
permit: NF 4522 permit date: 01/01/68 comp. date: 01/01/68
Lambert X: 3009280 Lambert Y: 2238792 td: 18

producing formation: td formation:
latitude: 39.172499 longitude: 89.467089
Water from sand at depth 15 to 19 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
48	CONCRETE	1	18

Size hole below casing: in.
Static level 15 ft. below casing top which is 1 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.
Formations Passed Through

	Thickness	Bottom
clay	12	12
sand	6	18

121352312600 Link, Harold F. 6- 8N- 3W
Montgomery Huston, Earl Jr.
Status: WATER SW SE NW Elev: 0
permit: 136436 permit date: 10/20/87 comp. date: 10/22/87
Lambert X: 3008632 Lambert Y: 2236813 td: 34
producing formation: td formation:
latitude: 39.167036 longitude: 89.469390
Water from gravel at depth 18 to 34 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PLASTIC	0	10
36	CONCRETE	0	34

Size hole below casing: 0 in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.
Formations Passed Through

	Thickness	Bottom
clay	18	18
gravel	16	34

121352288300 Beasley, Eugene B. 6- 8N- 3W
Montgomery Kunz, John
Status: WATER NW SE NW Elev: 0
permit: 93560 permit date: 04/29/80 comp. date: 05/01/80
Lambert X: 3008628 Lambert Y: 2237473 td: 24
producing formation: td formation:
latitude: 39.168864 longitude: 89.468194
Water from sand at depth 16 to 24 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PLASTIC	0	10
36	CONCRETE	0	24

Size hole below casing: 0 in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.
Formations Passed Through

	Thickness	Bottom
clay	16	16
sand to hardpan	8	24

121352312700 Link, Harold F. 6- 8N- 3W
Montgomery Latvenas, Joe
Status: WATER NW SE NW Elev: 0
permit: 136499 permit date: 10/22/87 comp. date: 10/26/87
Lambert X: 3008628 Lambert Y: 2237473 td: 40
producing formation: td formation:
latitude: 39.168864 longitude: 89.468194
Water from gravel at depth 15 to 17 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PLASTIC	0	10
36	CONCRETE	0	40

Size hole below casing: 0 in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	15	15
gravel	2	17
gray clay	23	40

121352236800 Beasley 6- 8N- 3W
Montgomery Lockot, Robert
Status: WATER SW SW NE Elev: 0
permit: 64891 permit date: 08/08/77 comp. date: 08/12/77
Lambert X: 3009952 Lambert Y: 2236824 td: 31
producing formation: td formation:
latitude: 39.167065 longitude: 89.464709
Water from sand at depth 13 to 15 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
36	CONCRETE	0	31
6	PLASTIC	0	10

Size hole below casing: in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	13	13
sand	2	15
hardpan	16	31

121352288400 Beasley, Eugene B. 6- 8N- 3W
Montgomery Marcolini, Kelly
Status: WATER SW SE NE Elev: 0
permit: 55284 permit date: 11/30/76 comp. date: 12/06/76
Lambert X: 3011272 Lambert Y: 2236835 td: 21
producing formation: td formation:
latitude: 39.167094 longitude: 89.459698
Water from gravel at depth 15 to 21 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PLASTIC	0	10
36	CONCRETE	0	21

Size hole below casing: 0 in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	15	15
gravel	6	21

121350162200 6- 8N- 3W
Montgomery McWilliams, Neal 1
Status: WATER NW NW NW Elev: 0
permit: NF 4134 permit date: 01/01/68 comp. date: 06/29/68
Lambert X: 3007770 Lambert Y: 2238792 td: 37
producing formation: td formation:
latitude: 39.172500 longitude: 89.472444
Water from sand at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
48	CONCRETE	1	37

Size hole below casing: in.
Static level 20 ft. below casing top which is 1 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	18	18
sand	9	27

clay	10	37

121352315600 Link, Harold F. 6- 8N- 3W
Montgomery *Mutchler, Jim*
Status: WATER NW NW SE Elev: 0
permit: 001867 permit date: 05/12/88 comp. date: 06/01/88
Lambert X: 3009956 Lambert Y: 2236168 td: 65
producing formation: td formation:
latitude: 39.165260 longitude: 89.463933
Water from gravel at depth 17 to 59 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PLASTIC	0	10
36	CONCRETE	0	65

Size hole below casing: in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	15	15
gravel & clay	3	18
yellow sand clay	8	26
gray clay	15	41
gray gravel & clay mix	2	43
gray clay	11	54
gray gravel	5	59
gray clay	6	65

121352201600 Wilson, Carl 6- 8N- 3W
Montgomery Rambo, John
Status: WATER NE NW NW Elev: 0
permit: 42557 permit date: comp. date: 01/13/76
Lambert X: 3007960 Lambert Y: 2238792 td: 32
producing formation: td formation:
latitude: 39.172500 longitude: 89.471771
Water from clay at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
30	CONCRETE	0	33

Size hole below casing: in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	32	32

121352245600 Beasley 6- 8N- 3W
Montgomery Rosenberger, Bob
Status: WATER SE SE NW Elev: 0
permit: 83958 permit date: 03/15/79 comp. date: 04/23/79
Lambert X: 3009292 Lambert Y: 2236818 td: 32
producing formation: td formation:
latitude: 39.167050 longitude: 89.467049
Water from gravel at depth 16 to 20 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PLASTIC	0	10
36	CONCRETE	0	32

Size hole below casing: in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	16	16
gravel	4	20
hardpan	6	26
blue clay	6	32

121352288600 Kohnen, Clarence 6- 8N- 3W
Montgomery White, Douglas
Status: WATER 119 SL 139 WL NW NE NE Elev: 0
permit: 88057 permit date: 07/26/79 comp. date: 07/30/79
Lambert X: 3011070 Lambert Y: 2238585 td: 35
producing formation: td formation:
latitude: 39.171925 longitude: 89.460298
Water from red sand & clay at depth 25 to 28 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
36	CONCRETE	0	35

Size hole below casing: 0 in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
top soil	1	1
clay	24	25
red sand clay	3	28
blue clay	7	35

121350008300 Hillsboro Well 1- 8N- 4W
Montgomery Herguth, Fernine
Status: COAL Elev: 0
permit: 0 permit date: comp. date: 09/01/14
Lambert X: 3004856 Lambert Y: 2236468 td: 570
producing formation: td formation:
latitude: 39.166087 longitude: 89.482780
Water from at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)

Size hole below casing: in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
soil & clay	10	10
quick sand	15	25
shale	43	68
sand rock little water	10	78
shale	307	385
coal	2	387
shale	38	425

121352343500 Layne Western Co. 1- 8N- 4W
Montgomery Hillsboro 3-54
Status: WTST 1500 SL 800 WL SW Elev: 0
permit: permit date: comp. date:
Lambert X: 3003052 Lambert Y: 2235340 td: 0
producing formation: td formation:
latitude: 39.162974 longitude: 89.489178
Water from at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)

Size hole below casing: in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
S.S. #24537 (0-92')	0	0

121352362800 Crank, Tim / Marlo John 1- 8N- 4W
Montgomery Hillsboro, City of HIMW-101
Status: MONIT NW SW Elev: 567GL
permit: none permit date: comp. date: 09/10/92

Lambert X: 3002899 Lambert Y: 2235809 td: 21
producing formation: td formation:
latitude: 39.164268 longitude: 89.489720
Water from sand at depth 8 to 15 ft.
Screen: Diam. 6 in. Length: 15 ft. Slot: 10
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PVC SCH 40	-3	6

Size hole below casing: in.
Static level 9 ft. below casing top which is 3 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
gray-brown silty clay	8	8
clayey sand w/trace gravel	7	15
gray-brown sandy clay (till)	6	21

121352362900 Crank, Tim / Marlo John 1- 8N- 4W
Montgomery Hillsboro, City of HIMW102
Status: MONIT NW SW Elev: 567GL
permit: none permit date: comp. date: 09/10/92
Lambert X: 3002899 Lambert Y: 2235809 td: 20
producing formation: td formation:
latitude: 39.164268 longitude: 89.489720
Water from sand at depth 7 to 15 ft.
Screen: Diam. 6 in. Length: 15 ft. Slot: 10
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PVC SCH 40	-3	5

Size hole below casing: in.
Static level 9 ft. below casing top which is 3 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
silty clay, gray brown	7	7
clayey sand w/trace gravel	8	15
gray -brown sandy clay (till)	5	20

121352363000 Crank, Tim / Marlo John 1- 8N- 4W
Montgomery Hillsboro, City of HIMW103
Status: MONIT NW SW Elev: 567GL
permit: none permit date: comp. date: 09/10/92
Lambert X: 3002899 Lambert Y: 2235809 td: 19
producing formation: td formation:
latitude: 39.164268 longitude: 89.489720
Water from sand at depth 7 to 17 ft.
Screen: Diam. 2 in. Length: 10 ft. Slot: 10
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
2	PVC SCH 40	0	9

Size hole below casing: in.
Static level 8 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
gray-brown silty clay	7	7
gray clayey sand, trace gravel	10	17
gray-brown sandy clay	1	18

121352363100 Crank, Tim / Marlo John 1- 8N- 4W
Montgomery Hillsboro, City of HIMW104
Status: MONIT NW SW Elev: 567GL
permit: none permit date: comp. date: 10/26/92
Lambert X: 3002899 Lambert Y: 2235809 td: 14
producing formation: td formation:
latitude: 39.164268 longitude: 89.489720
Water from at depth 0 to 0 ft.
Screen: Diam. 2 in. Length: 0 ft. Slot: 10
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)

2 PVC SCH 40 0 9
Size hole below casing: in.
Static level 7 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
black silty clay	6	6
gray silt clay, trace sand & gravel	4	10
gray-black silty clay, tr/sand & gravel	1	11
fine coarse sand w/clay till	1	12
gray till	2	14

121352316400 Link, Harold F. 1- 8N- 4W
Montgomery Petcher, Thomas
Status: WATER NW NW NE Elev: 0
permit: 002511 permit date: 06/03/88 comp. date: 06/14/88
Lambert X: 3005165 Lambert Y: 2238777 td: 32
producing formation: td formation:
latitude: 39.172461 longitude: 89.481683
Water from gravel at depth 16 to 18 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PLASTIC	0	11
36	CONCRETE	0	32

Size hole below casing: in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	16	16
yellow gravel	2	18
gray clay	14	32

121350015400 Sullivan Machine Co 1- 8N- 4W
Montgomery
Status: COAL 2450 SL 1300 WL Elev: 561GL
permit: 0 permit date: comp. date:
Lambert X: 3003540 Lambert Y: 2236288 td: 1
producing formation: td formation:
latitude: 39.165590 longitude: 89.487447

121350007900 Hillsboro Mine 12- 8N- 4W
Montgomery Hillsboro Mine
Status: COAL Elev: 632GL
permit: 0 permit date: comp. date:
Lambert X: 3004875 Lambert Y: 2231197 td: 438
producing formation: td formation:
latitude: 39.151535 longitude: 89.482716
Water from at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)

Size hole below casing: in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay sand, yellow & pebbles	14	14
hardpan	23	37
quicksand	1	38
hardpan	16	54
clay, yellow	7	61
sand gravel	21	82
clay, blue	26	108
sand, coarse	3	111
sand, coarse & gravel	13	124
limestone, hard & broken	8	132
clay shale	35	167
clay, hard & shale	17	184

limestone	1	135
shale, bituminous	1	136
coal nog	1	137
clay shale	9	196
clay shale w/ hard bands	20	216
sand shale	55	271
sand shale w/ limestone bands	8	279
sandstone	2	281
fire clay	8	289
shale, sandy	24	313
slate	78	391
shale, conglomerate	5	396
clay shale	4	400

(OFFICE) (USE ONLY)	FIPS	TWN	RNG	SC	PL	OWNER	DRILLER	DATE	PERMIT	DPTH	REC	US	TY	AQ
113897	135	08N	04W	01				00/00/1924		22	RG	DO	~~	~~
113898	135	08N	04W	01				00/00/1926		23	RG	DO	~~	~~
113899	135	08N	04W	01				00/00/1926		60	RG	DO	~~	~~
237419	135	08N	04W	01		CITY OF HILLSBURO HIMW-101	CRANK	09/10/1992		21	RG	MO	--	UN
237421	135	08N	04W	01		CITY OF HILLSBURO HIMW-103	CRANK	09/10/1992		18	RG	MO	--	UN
237420	135	08N	04W	01		CITY OF HILLSBURO HIMW-102	CRANK	09/10/1992		20	RG	MO	--	UN
237422	135	08N	04W	01		CITY OF HILLSBURO HIMW-104	CRANK	10/26/1992		14	RG	MO	--	UN

Query the PICS Database through the World Wide Web
http://gwinfo.sws.uiuc.edu/gwdb-query.html

County: Montgomery

Township Code: 8N
Range Code: 4W
Section Codes: 1

0 records were found for the specified locations.

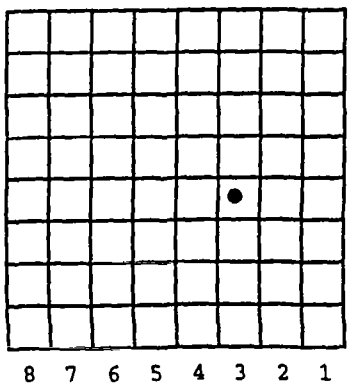
Questions : Contact the Illinois State Water Survey's Ground Water Division @ (217)333-7223
Publication: Please cite the Illinois State Water Survey's PICS (Public-Industrial-Commercial) Database in all publications based wholly or partially on this information.

Please Note:

The data in the PICS Database is a listing of municipal and large industrial and commercial wells which are known to the Illinois State Water Survey (ISWS). The information was initially entered from public water supply data and supplemented with the Illinois Water Inventory Project data. This database is updated as additional information is received and verified.

This data cannot be resold or redistributed. The Illinois State Water Survey must be acknowledged in any publication of this material.

Location of 10-acre-plot within a Section



The origin can be found at the lower-right-hand corner of an 8 x 8 grid. In this example, the well is in 10-acre plot 3d.

ILLINOIS
DEPARTMENT OF
NATURAL
RESOURCES

Illinois State Water Survey

Main Office • 2204 Griffith Drive • Champaign, IL 61820-7495 • Tel (217) 333-2210 • Fax (217) 333-6540
Peoria Office • P.O. Box 697 • Peoria, IL 61652-0697 • Tel (309) 671-3196 • Fax (309) 671-3106

SWS

Ground-Water Section • Tel (217) 333-4300 • Fax (217) 244-0777

July 5, 2000

Mr. Mark Milward
Philip Environmental Services
210 W. Sandbank Road
Columbia, IL 62236

Dear Mr. Milward:

As you requested during our telephone conversation on June 30, we are enclosing printouts from our Private Well and Public, Industrial, Commercial Survey (PICS) Databases for Section 1 of Township 8N., Range 4W., in Montgomery County.

No available information is indicated on the printout by the statement "0 records were found for the specified locations." Also enclosed are explanations of the Illinois State Water Survey Private Well and PICS Databases.

The data included in the Private Well Database are those non-municipal wells which are known to the Illinois State Water Survey, and the PICS Database is an inventory of municipal well information and large industrial ground-water users. We may not have a copy of well records for these ground-water users.

The invoice accompanying this request covers the $20.00 query fee for private well information, $20.00 query fee for PICS information, and a $0.10 per page charge for 3 pages, plus a $5.00 shipping and handling fee, totaling $45.30.

If you have any questions or if we can be of further assistance, please call.

Sincerely,

Susie Dodd-Casey

Susie Dodd-Casey
Assistant Supportive Scientist
Ground-Water Section
Phone: (217) 333-9043

sdc/psh

Enclosures

INVOICE

ILLINOIS STATE WATER SURVEY
2204 Griffith Drive
Champaign, IL 61820-7495
(217) 333-4300
Fax: (217) 244-0777

SOLD TO:
Mark Milward
Philip Environmental Services
210 W. Sandbank Road
Columbia, IL 62236

SHIP TO:

INVOICE NUMBER: GW00-507
INVOICE DATE: July 6, 2000
CUSTOMER REF. NO.:

SALES PERSON: sdc

DESCRIPTION	AMOUNT
Private Well Database Query	$20.00
PICS Database Query	$20.00
Page charge for 3 pages @ $0.10	$0.30
SUBTOTAL	$40.30
S & H	$5.00
TOTAL DUE	$45.30

MAKE CHECK PAYABLE TO: IL STATE WATER SURVEY
Attention: Administration
NET 30 DAYS
Please return *COPY* with payment

For Accounting Use Only: Credit Acct. #1-3-60977-002, Dept. G

ILLINOIS STATE WATER SURVEY
PICS DATABASE EXPLANATION

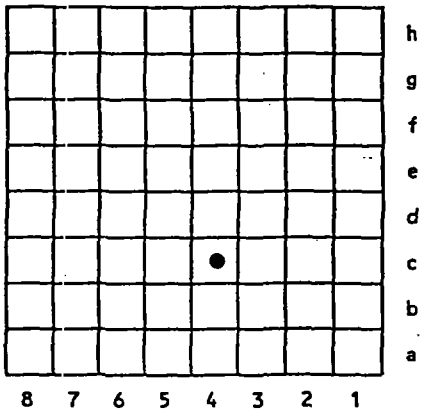
SWS ID	ISWS facility ID number
Name	Facility name
No.	ISWS point source well/intake number
Status	Point source status of well/intake
	A = Abandoned - no longer in existence, no affidavit on file, or do not know if it has been filled in C = Capped - cap attached to top D = Disconnected - disconnected from system E = Emergency - available for standby use I = In Use - produces major portion of water O = Observation - used for water level measurements S = Sealed - filled in U = Unused - exists but not used
Location	County, Township, Range, Section, 10-Acre plot
Depth	Depth (well to nearest ft)
Type log	D = driller's log C = correlated log S = sample study log - = log not available
Year constructed	Year point source initially constructed
Driller	Well drilling contractor of well

ISWS 10-ACRE PLOT LOCATION SYSTEM

The following is an explanation of the ISWS Private Well Database location system.

The location system uses Township, Range, and Section. The location consists of five parts: County abbreviation, Township, Range, Section, and coordinate within the section (subsection or 10-acre plot). Sections are divided into rows of ⅛-mile squares. Each ⅛-mile square contains 10 acres and corresponds to a quarter of a quarter of a quarter section. A normal section of 1 square mile contains 8 rows of ⅛-mile squares; an odd-sized section contains more or fewer rows. Rows are numbered from east to west and lettered from south to north as shown in the diagram.

Example: St. Clair County, FIP No. 163
T2N, R10W
Section 23



The location of the well shown above is 163 2N10W-23.4c. The well point is located at the center of this 10-acre plot.

Query the Private Well Database through the World Wide Web
http://gwinfo.sws.uiuc.edu/gwdb-query.html

County: Montgomery

Township Code: 8N
Range Code: 4W
Section Codes: 1

7 records were found for the specified locations.

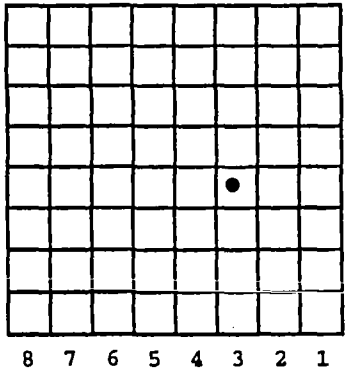
Questions : Contact the Illinois State Water Survey's Ground Water Division @ (217)333-9043
Publication: Please cite the Illinois State Water Survey's Private-Well Database in all publications based wholly or partially on this information.

Please Note:

The data in the Private Well Inventory Database is a listing of those non-municipal wells which are known to the Illinois State Water Survey (ISWS). This information has been entered verbatim from well logs submitted by the driller, chemical analysis reports, well sealing forms, well inventory forms from the 1930-1934 well survey, and other special projects. The accuracy of this data is controlled by those who submitted the form. Information in the private well database has not been verified.

This data cannot be resold or redistributed. The Illinois State Water Survey must be acknowledged in any use of this material.

Location of 10-acre-plot within a Section



The origin can be found at the lower-right-hand corner of an 8 x 8 grid. In this example, the well is in 10-acre plot 3d.

ILLINOIS STATE WATER SURVEY
PRIVATE WELL DATABASE EXPLANATION

TWN	TOWNSHIP
RNG	RANGE
SC	SECTION
PL	PLOT LOCATION
OWNER	WELL OWNER
DRILLER	WELL DRILLING CONTRACTOR OF WELL
DATE	DATE INITIALLY DRILLED
PERMIT	PERMIT CODE LETTER INDICATED AGENCY WHICH ISSUED PERMIT # M - MINES AND MINERALS (After 1988 Only Observation Wells And Irrigation Wells) P - PUBLIC HEALTH (All Non-Community Supplies) E - EPA (Community Supplies) N - NO FEE X - UNDETERMINED
DEPTH	DEPTH (Well To Nearest Ft)
REC	RECORD TYPE (Types Of Information On File) R - CONSTRUCTION REPORT G - GEOLOGY S - SEALED A - AFFIDAVIT C - CHEMICAL ANALYSIS I - INVENTORY X - INDICATES COMMENT IN OWNERS FIELD SOMETHING UNUSUAL O - ANY OTHER TYPE OF RECORD
US	WELL USE - A TWO LETTER CODE INDICATING THE USAGE OF THE WELL CO - CONSERVATION CS - COMMUNITY SUPPLY DO - DOMESTIC DW - DE-WATERING IC - INDUSTRIAL/COMMERCIAL IR - IRRIGATION MO - MONITORING NC - NON-COMMUNITY OB - OBSERVATION PK - PARK RC - RECOVERY WELL RW - RELIEF WELL

PHILIP ENVIRONMENTAL

RECORD OF CONVERSATION

Route To: _____

_____ Telephone Call (to/from)

_____ Meeting

Organization City of Hillsboro Date 6/29/00 Time 09:25

Contact Dave Booher Title Water Superintendant

Address _____ Telephone Number (217) 532-5566

City, State, Zip Hillsboro, Illinois

Project Name _____ Project Number _____

REFERENCE Water Well Survey

Discussion Summary

City of Hillsboro does not have any public supply water wells. Hillsboro draws all of their water supply from Lake Hillsboro. The Lake Hillsboro intake is located near the dam, which is about 1 mile north of Eagle Zinc. The City of Hillsboro does not have a local ordinance prohibiting privately-owned water wells. Eagle Zinc obtains their water through City of Hillsboro

By Mark Milward

PHILIP ENVIRONMENTAL

RECORD OF CONVERSATION

Route To: _____

_____ Telephone Call (to/from)

_____ Meeting

Organization Montgomery County Environmental Health Date 6/30/00 Time 0900

Contact Robert Kirk Title Director Public Health

Address _____ Telephone Number (217) 532-2240

City, State, Zip Hillsboro, Illinois

Project Name _____ Project Number _____

REFERENCE Water Well Survey - Eagle Zinc

Discussion Summary

Mr. Kirk has been with Montgomery County Environmental Health for 34 years.

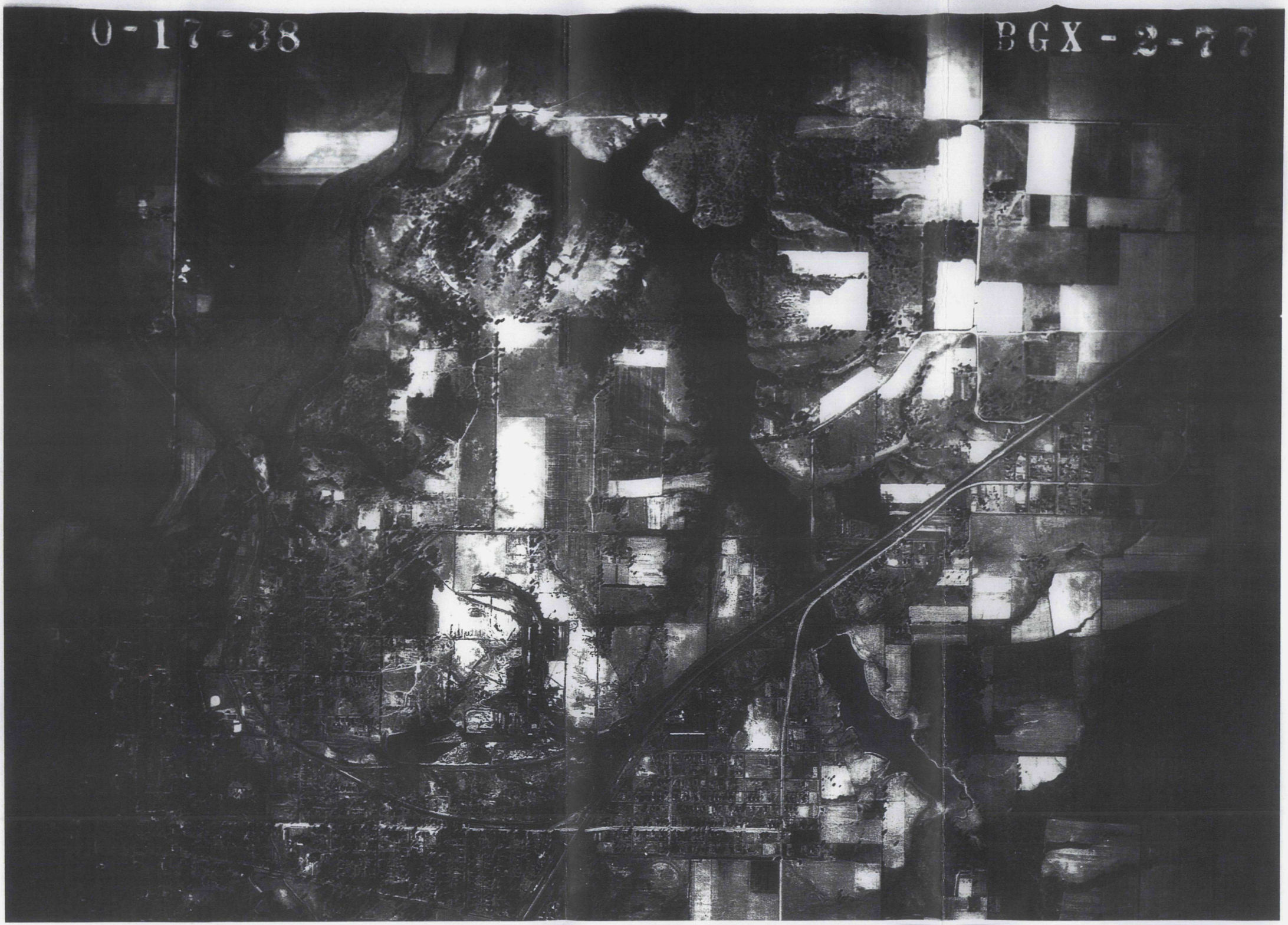
Mr. Kirk is not aware of any private water wells within 2,500 feet of Eagle Zinc. Most, if not all of the properties in Hillsboro and adjacent Schramm City are on public water. Public water is obtained from Lake Hillsboro.

Montgomery County has been permitting local water wells since January 1990. Prior to that time, records were kept by the State.

By _____

PE-21 (4/95)

ATTACHMENT C
Historical Aerial Photographs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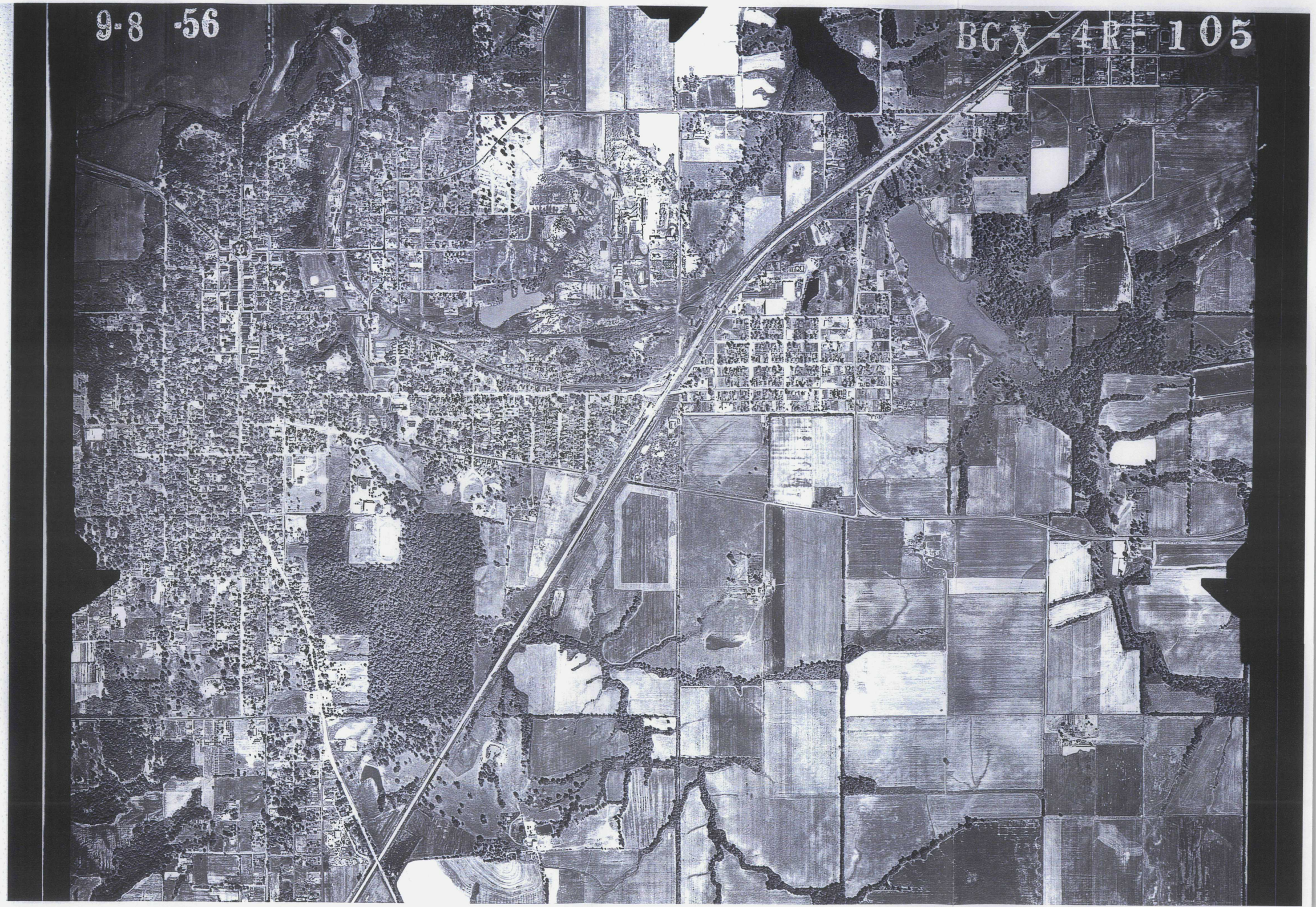
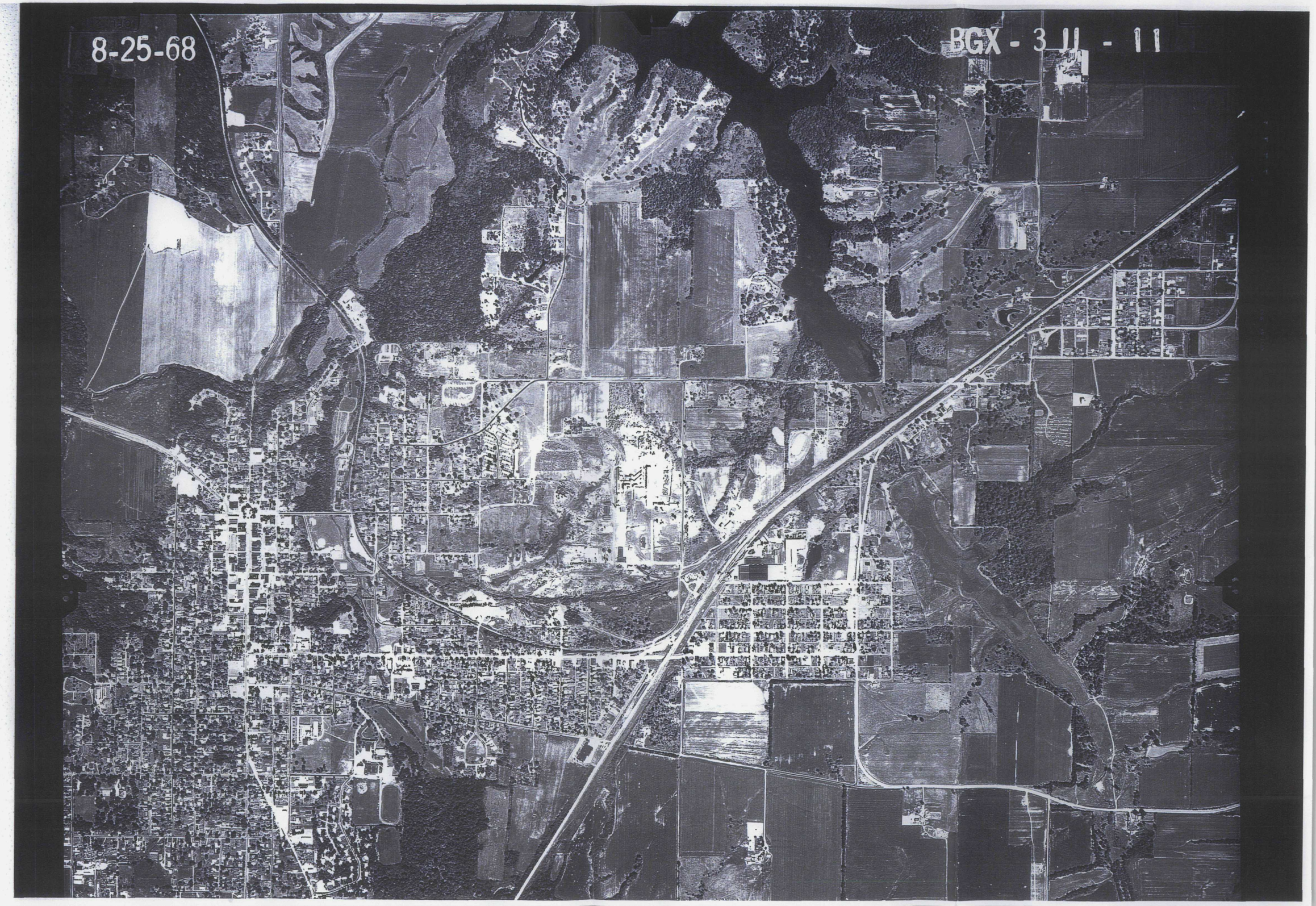

9-8 -56
BGX - 4R - 105


8-25-68
BGX - 3 11 - 11

vistainfo
vistainfo.com

Location : Eagle Zinc
Hillsboro, IL
Year : 1973
(Original photo hazy)
Apprx. Scale : 1inch = 460 feet

N

VISTA Information Solutions
If you have any questions call me at 1-800-767-0403

Order # 435508-749119
September 26, 2001

vistainfo
vistainfo.com

Location : Eagle Zinc
Hillsboro, IL
Year : 1987
(Original photo hazy)
Apprx. Scale : 1inch = 700 feet

N

VISTA Information Solutions
If you have any questions call me at 1-800-767-0403

Order # 435508-749119
September 26, 2001

vistainfo
vistainfo.com

Location : Eagle Zinc
Hillsboro, IL
Year : 1998

Apprx. Scale : 1inch = 590 feet

N

VISTA Information Solutions
If you have any questions call me at 1-800-767-0403

Order # 421907-369636
August 14, 2001

ATTACHMENT D
Site History Timeline

- **1912** Site initially developed for zinc processing under the name Lanyon Zinc Company. Products: zinc, sulfuric acid
- **1919** Site purchased by Eagle-Picher Industries. Same products as Lanyon.
- **1935** Began manufacture of zinc oxide and leaded zinc oxide. Ceased zinc smelting and sulfuric acid production.
- **1958** Ceased production of leaded zinc oxide.
- **November 1980** Site purchased by The Sherwin-Williams Company.
- **June 1981** Site initially listed on CERCLIS as a Discovery Action.
- **1984** CERCLA Preliminary Assessment conducted by IEPA.
- **October 1993** CERCLA Expanded Site Inspection conducted by IEPA.
- **May 1998** Site entered into Interim Consent Order with IEPA.
- **March 1999** GBI Reports entitled *Monitoring Well Installation and Ground Water Sampling Interim Report and Interim Report of Residue Sampling and Analysis* submitted to IEPA.
- **June 2000** NPDES Storm Water Permit No. IL 0074519 issued to Eagle Zinc Company.
- **Summer 2001** Engineered storm water retention pond constructed at Outfall 002.
- **December 31, 2001** Eagle Zinc Parties enter into AOC with USEPA for completion of RI/FS.

ENVIRON
740 Waukegan Road, Suite 401, Deerfield, IL 60015

Site History Timeline
Eagle Zinc
Hillsboro, IL

Attachment
D

Drafter: APR | Date: 3/8/02 | Contract Number: 21-7400D | APPROVED: | REVISED: